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Complementary Days.

Day.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.
	1794.	1795.	1796.	1797.	1798.	1799.	1800.	1801.	1802.	1803.	1804.	1805.
	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.
1*	17	17	17	17	17	17	18	18	18	18	18	18
2	18	18	18	18	18	18	19	19	19	19	19	19
3	19	19	19	19	19	19	20	20	20	20	20	20
4	20	20	20	20	20	20	21	21	21	21	21	21
5	21	21	21	21	21	21	22	22	22	22	22	22
6		22				22				23		

* Complementary days, or Sansculottides, called *Primidi*, *Duodi*, *Tridi*, *Quartidi*, *Quintidi*, and *Sextidi*. These days were not considered as belonging to any month. The sonorous names given to the months by the innovators have been freely translated thus: —

Wheezy,
Sneezy,
Breezy.
Slippy,
Drippy,
Nippy.
Showery,
Flowery,
Bowery.
Hoppy,
Croppy,
Poppy.

Chambers's Descriptive Astronomy, p. 443.

Six hundred and forty-first Meeting.

February 13, 1872. — ADJOURNED STATED MEETING.

The PRESIDENT in the chair.

Professor John Trowbridge remarked: —

While experimenting upon the electromotive action of fluids separated by membranes, I was led to reflect upon the surface action observed by Tomlinson, and to examine it from an electrical point of view. I made use of a bath of sulphate of zinc in which were placed the amalgamated zinc terminals of a galvanometer. On dropping liquids upon the surface of this bath electrical currents were produced, but they were not due to surface action; for, on using a drop of colored liquid, the deflection of the galvanometer was observed before the liquid reached the terminals. This was also proved by coating the plates of the terminals with parafine, with the exception of a narrow strip two inches below the surface of the bath.

The President communicated the following: —

Botanical Contributions by Asa Gray.

1. *Notes on Labiatæ.*

At the close of a preceding article (see vol. 8, pp. 294 – 296) two new genera of Labiatæ were described. I now offer additional notes upon one of these genera, and upon some other plants of the order, being such of the results of a recent revision of the North American species as seem worth while to be now recorded.

Poliomintha, Gray, in Proc. Am. Acad. 8, p. 295. — The two species on which the genus was founded, *P. incana* and *P. longiflora,* have corolla intus piloso-annulata; calycis dentes erecti. A second section has to be added: viz.

§ 2. Corolla exannulata: calycis dentes nunc patentes. *Keithiæ* affinius sed staminum superiorum filamenta sterilia conspicuæ.

P. marifolia. *Keithia marifolia* Schauer, Linnæa, 20, p. 705. If Coulter's no. 1080 be rightly here referred, the species is well marked by its roundish-ovate leaves with diverging veins, and its erect calyx-teeth one third to one fourth the length of the tube; rudimentary filaments filiform. The calyx is obscurely bilabiate.

P. mollis. Tomentoso-incana, basi tantum lignescente; foliis ovatis ovalibusque 3 – 5-plinerviis basi in petiolum brevem angustatis; calycis dentibus subinæqualibus tubo angusto 13-nervi quadruplo brevioribus inæqualiter patentibus; corolla calycem duplo superantibus; rudimentis staminum superiorum brevibus subulatis. *Hedeoma mollis* Torr. Mex. Bound. p. 129 (char. vix bona). — S. W. Texas; cliffs on the Rio Grande near Puerte de Paysano, Dr. Bigelow.

Cunila Mariana L. The genus *Cunila,* of which this species is the type, ever since its reformation by Bentham more than 30 years ago, has been characterized as diandrous with no vestiges of the superior pair of stamens. Bentham cites the figure in Sweet, Brit. Flower Garden, t. 243, without noticing that it represents, and the letterpress describes, a rather conspicuous capitellate-tipped pair of rudimentary stamens, probably supposing this to be incorrect. It is, however, only an exaggeration; for, as Professor Buckhout of Pennsylvania Agricultural College has shown me, minute rudimentary sterile filaments are uniformly present in our species. If truly absent in the Mexican and Brazilian species, the value of this character as a generic one is reduced, and by analogy a leading distinction of the preceding genus considerably invalidated.

HEDEOMA Pers. — Under EUHEDEOMA, I arrange our species as follows,

* Filamenta stam. sup. conspicua antheram abortivam capitellatam nunc vix imperfectam gerentia: calyx egregie bilabiatus, labiis difformibus.

H. PULEGIOIDES Pers. — Cis-Mississippiana.

* * Filamenta superiora aut minuta subulata nuda, aut obsoleta: calyx dentibus omnibus subulatis.

+ Subæquilongis, post anthesin erectis vel sursum curvatis: annuæ, erectæ, bracteis lineari- vel aceroso-subulatis demum reflexis patentibusve.

H. ACINOIDES Scheele in Linnæa, 22, p. 592. Subglabra, latifolia; calyce fauce parum pilosa, limbo vix bilabiato corolla 2–3-plo breviore. Arkansas, Texas.

H. HISPIDA Pursh. Foliosa, angustifolia; calyce bilabiato, tubo cum foliolorum linearium marginibus pilis hispidis instructo, dentibus corollam adæquantibus, inferioribus magis aristiformibus hispidis. *H. hirta* Nutt. — Trans-Mississippiana.

+ + Calycis dentibus inferioribus superiores superantibus: bracteæ sæpius erectæ pedicellis breviores.

++ Perennes basi lignescente; foliis subsessilibus, venis validis in dentes salientes excurrentibus.

H. PLICATA Torr. Bot. Mex. Bound. p. 130. — S. W. Texas.

H. DENTATA Torr. l. c. pro parte. — Arizona.

++ ++ Annuæ basi indurata quandoque perennes? foliis integerrimis parce crenulatisve, venis haud prominulis convergentibus.

H. PIPERITA Benth. Lab. p. 730? Cinereo-pubescens vel puberula; foliis ovatis obtusis basi sæpius rotundatis, floralibus supremis nunc oblongis petiolatis; verticillastris laxis pauci–plurifloris; calyce oblongo-tubuloso gibboso hirsuto, limbo satis bilabiato, labio superiore patente dentibus subulatis, inferiore dentibus magis setaceis longioribus erectis corollam subæquantibus. *H. dentata* var. *nana*, Torr. l. c. — Accords with Bentham's character of Moçino and Sesse's plant, except that the calyx is by no means twice the size of that of *H. pulegioides*. — New Mexico, Arizona, and adjacent parts of Mexico.

Var. OBLONGIFOLIA: forma strictiore altiore (pedali), foliis oblongis summis lanceolatis acutis. *H. dentata* Torr. l. c. pro parte. — New Mexico and Arizona.

H. DRUMMONDII Benth. l. c. Cinereo-puberula vel pubescens; foliis ovalibus oblongis vel (præsentim superioribus) linearibus obtusis integerrimis sessilibus vel basi angustata breviter petiolatis; verticillastris paucifloris; calyce ovato-tubuloso hispido vix bilabiato, dentibus omnibus subulato-setaceis post anthesin conniventi-erectis sursumque plus minus curvatis, inferioribus superiores dimidio superantibus corolla pl. m. brevioribus. *H. ciliata* Nutt. Pl. Gamb. p. 183. Wright's 1718, cited by Torrey under *H. plicata*, belongs here. — Nebraska and Texas to Arizona and Mexico.

A well-marked section, for the two following species, may be named: —

§ 2. STACHYHEDEOMA. Flores subsessiles spicati, corolla fauce sub labio inferiore biplicata. — Herbæ erectæ, foliis subsessilibus, summis calyceque pilis longis hirsuto-ciliatis.

H. GRAVEOLENS Chapman in herb. Caule sesquipedali e radice perenni? sæpius simplici parce hirsuto in spicam virgatam transeunte; foliis ovatis rotundisve paucidentatis (semipollicaribus), floralibus consimilibus gradatim minoribus cum bracteis oblongis flores subsessiles haud æquantibus; calycis bilabiati dentibus valde hispido-ciliatis, labii superioris lati deltoideis brevibus, inferioris angustissime subulatis tubo oblongo campanulato atque corollæ tubo subæquilongis; staminibus fertilibus labium superius vix emarginatum corollæ adæquantibus, sterilibus brevibus subulatis. Calyx inæqualiter 12 – 13-nervius, fauce pilis paucis hirsuta, corolla intus nuda. — Florida, near Apalachicola, Dr. Chapman.

H. CILIATA Benth. in DC. Caule ultrapedali e radice annua retrorsum pubescente; foliis oblongis obtusis subintegerrimis glabris basi cum floralibus angustioribus bracteisque subulatis vel setaceis pilis setisve longis albidis parce hispido-ciliatis; spica brevi densa e verticillastris 6 – 10-floris; pedicellis brevissimis complanatis; calyce fusiformi-subgibboso 15-nervio stricto basi hispido superne bilabiato, dentibus subulatis consimilibus ciliolatis post anthesin conniventibus, fauce villoso-barbata; corolla tubo vix exserto, labio superiore bilobo, fauce sub staminibus 2 brevibus inclusis pilosa; filamentis sterilibus nullis. *Keithia ciliata* Benth. Lab. — Texas, Berlandier (ex Benth.), Drummond.

CALAMINTHA (§ 3. ACANTHOMINTHA; verticillastri capituliformes, bracteis 4 majusculis rigidis foliaceis spinuloso-dentatis suffulti: antheræ subtus villoso-barbatæ) ILICIFOLIA: annua, ramosa, spithamæa, puberula; foliis caulinis floralibusque ovato-spathulatis cuneato-oblongisve (semipollicari, cum petiolo æquilongo) dentibus paucis muticis instructis; bracteis flores adæquantibus sessilibus ovatis coriaceis supra parce pilosis, venis divaricatis costaque valida in aristas rigidas productis; calyci oblongo villoso-pubescente, labio superiore tridentato quam inferiore bifido longiore et latiore, dentibus deltoideis spinuloso-apiculatis; corolla (purpurea seu alba?) calyce duplo longiori; filamentis valde inæqualibus brevibus fauci fere insertis; antheris subunilocularibus, staminum breviorum minoribus. — California, probably Lower California, Major Rich? in Herb. Torr.

SALVIA L. Dr. Torrey justly reduces *Salviastrum* of Scheele to *Salvia;* but it forms a capital section, for which Engelmann's proposed name of *Trichosphace* (Bot. Zeit. 9, p. 45), would have been most characteristic.

SALVIA (SALVIASTRUM) TEXANA Torr. Bot. Mex. Bound. p. 132. *Salviastrum Texanum* Scheele; Torr. & Gray Pacif. R. R. 2, t. 6. — Texas to New Mexico.

Var. CANESCENS: forma incana, foliis omnibus angusto-linearibus marginibus valde revolutis, floribus paucioribus. — S. W. Texas and Rio Grande on the Pecos. Wright (467), Schott.

SALVIA (SALVIASTRUM) ENGELMANNI. Vix puberula cum pilis setosis parcissimis; foliis tenuioribus, floralibus plerumque flores parcos adæquantibus; corolla (plus pollicari) tubo fauceque angustiore calyce duplo longiori; cæt. præcedentis. — W. Texas, Wright (465), Lindheimer.

SALVIA (ECHINOSPHACE) CARDUACEA Benth., includes *S. gossypina* Benth. Pl. Hartw. And the section *Echinosphace* is a good primary one when made to include *Pycnosphace* also, viz.

SALVIA (ECHINOSPHACE) COLUMBARIÆ Benth. The median tooth of the upper lip of the calyx apparently is always wanting in this species!

SALVIA (HETEROSPHACE) HENRYI. *S. Rœmerianæ* similis, gracilior, pube nec molli; foliis foliolisve minoribus vix cordatis angulato-lobatis, floralibus inferioribus sæpe conformibus, etiam summis pedicillis æquilongis; calyce hirsuto, fauce sinubusque ciliato-barbatis seu villosis; corolla (coccinea) angustiori, labiis brevioribus minus lobatis, tubo basi intus haud piloso-annulato. — New Mexico, on the Mimbres, &c., Dr. Henry, Thurber, Bigelow, and adjacent borders of Texas, Wright (not numbered).

SALVIA (CALOSPHACE) GREGGII. Frutescens, 1° – 3°-pedalis, fere glaberrima; ramis gracilibus foliosis; foliis (lin. 3 – 9 longis) oblongis obtusissimis integerrimis basi in petiolum brevem angustatis aveniis costa prominula, floralibus calyce brevioribus caducis; racemo sparsifloro; calyce vix glanduloso, labiis patentibus tubo dimidio breviore, labio superiore lobisque inferioris bipartiti ovatis mucronato-acutis; corolla (pollicari rubra) glabra, tubo valde ventricoso, fauce sub labio inferiori (superius vix glanduloso-puberulum subæquante) abrupte constricta; connectivo crure inferiori oblongo-lineari; stylo postice piloso. *S. microphylla* Torr. Mex. Bound. p. 131, non HBK. — Saltillo, Mexico, Gregg. S. Texas on the Rio Grande, Parry, Schott.

SALVIA (CALOSPHACE) PARRYI. Frutescens, humilis, ramosissima; foliis ovato-oblongis basi sæpius truncata crenatis obtusis brevipetiolatis cum ramulis tomentuloso-canescentibus, floralibus ovatis acuminatis membranaceis supra glabris persistentibus flores interrupte spicatos superantibus; calyce campanulato pilis dendriticis albis creberrime lanatis, labio superiori tridentato, inferiori bifido; corolla (parva cærulea?) pube dendritica lanulosa, labio superiore emarginato, inferiore lobis lateralibus parvis erectis, medio multo majore, iterum trilobo, lobulo medio rotundato emarginato; connectivis discretis, cruribus inferioribus semihastatis antherifero subulato æquilongis. *S. spicata?* Torr. Mex. Bound. p. 131, non R. & S. — Apache Springs, on the Rio Grande, Texas? Parry.

MONARDA L. Upon a revision of the genus, it appears evident that we have, of the section *Eumonarda*, three species with distinctly petioled leaves, viz. *M. didyma* L., *M. clinopodia* L. (excl. syn. Gronov.), and *M. fistulosa* L., the two latter pretty clearly distinct, and the last running into several remarkable varieties; also two with subsessile leaves, *M. Bradburiana* Beck, and *M. Russelliana* Nutt. Of the section *Cheilyctis*, there are *M. punctata* L., with its variety *lasiodonta* (Texas), and *M. citriodora* Cervantes, an older name than that of *M. aristata* Nutt. Of this there are two varieties, viz. var. *aristulata* (to which belongs the figure in Bot. Mag. t. 3526 and *M. penicillata* Nutt. Pl. Gamb.) and var. *tenui-aristata*.

CEDRONELLA MICRANTHA. Puberula; caule erecto; foliis membranaceous tenui-petiolatis grosse crenato-dentatis, inferioribus cordato-

ovatis obtusis, superioribus ovato-lanceolatis oblongisve, floralibus summis minutis calyce brevioribus; verticillastris sessilibus plurifloris plerisque in spicam cylindricam nudam (1–2-pollicarem) congestis; calyce viridulo ovato-campanulato, dentibus triangulari-subulatis tubo dimidio brevioribus; corolla (albida, vix lin. 2 longa) staminibusque parum exsertis. — S. W. Texas near the borders of New Mexico (station not recorded, Wright, without number). A close congener of *C. Mexicana* Benth., to which belongs (as a var. *cana*) *C. cana* Hook.; and *C. pallida* var. Torr. Mex. Bound. is a form with smaller and shorter corollas.

SCUTELLARIA L. Although it may be inexpedient to make of this genus a distinct tribe, as proposed by Visiani and adopted by Reichenbach, yet, now strengthened by the genus *Salizaria* Torr. (illustrated in the Botany of the Mexican Boundary), with similar embryo, &c., I should arrange for the two a subtribe (*Scutellarineæ*) of the *Stachydeæ*, — to which *Perilomia* (figured with a straight embryo) does not belong. The winged nutlets of *Perilomia*, however, are curiously imitated in one or two species of *Scutellaria*, only obscurely so in *S. parvula*, as has been noted by Dr. Torrey in the work above mentioned, but strikingly in *S. nervosa* Pursh, and in a Japanese species not otherwise very similar, viz. *S. hederacea* of Kunth and Bouché.

Dr. Torrey's reference of *S. Drummondii* to his *S. resinosa* is not borne out. The gradual transition alluded to is through a species quite distinct from either, and having neither the annual root of the former nor the filiform subterranean stolons bearing moniliform or concatenated tubers which the latter exhibits along with its near allies, *S. tuberosa*, *angustifolia*, *antirrhinoides*, and *parvula*. The nutlets of *S. resinosa*, and especially those of *S. Drummondii*,* are muricate, those of the species now distinguished are only minutely granulate and very much smaller. Its diagnosis is as follows: —

SCUTELLARIA WRIGHTII. Nec stolonosa nec tuberosa, e radice perenni lignosa multicaulis (semi–subpedalis); pube minuta; foliis ovatis et spathulato-oblongis integerrimis subsessilibus; corolla villoso-pubescente (violacea, lin. 6–7 longa) sursum valde ampliata, labiis æquilongis; nuculis minoribus minute granulatis. — E. Texas, Wright (no. 477, 478, 1539), Lindheimer. S. W. Arkansas, Gordon.

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* The original character of *S. Drummondii* assigns to it *crenate* leaves, of which there is, however, rarely a trace. Probably *S. cardiophylla* was confounded with it.

PHYSOSTEGIA INTERMEDIA. Caule gracili; foliis remotis lineari-lanceolatis repando-denticulatis; spicis filiformibus sæpius remotifloris; calyce brevi lato-campanulato, dentibus triangularibus acutis tubo æquilongis; corolla (vix semipollicari) fauce valde ampliata. *Dracocephalum intermedium* Nutt. Fl. Arkans. — W. Kentucky and Arkansas to Louisiana and Texas. Variable as *P. Virginiana* is, it does not include this, I think.

PHYSOSTEGIA PARVIFLORA Nutt. ex Benth. in DC. *P. imbricata* Benth. in DC., non Hook.! This, again, is a pretty well marked transmontane species, which must bear the name imposed by Nuttall: it is very different from Hooker's *P. imbricata*, which is one of the larger forms of *P. Virginiana.*

MACBRIDEA Ell. The calyx is pentamerous, but the two sepals which ordinarily compose the lower lip of the calyx are united (in *M. pulchra* Ell. almost wholly, in *M. alba* of Chapman usually but partially) with the lateral sepals, which, moreover, are free from the posterior sepal down to the throat. The anthers are pilose on the inner side, as is not uncommon in Labiatæ, and by no means, so far as I have seen, *inside,* as the phrase "intus filamentis pollini commixtis pilosæ" would imply.

STACHYS BIGELOVII. *S. coccineæ* admodum affinis, undique cinereo-puberula; foliis caulinis deltoideo-lanceolatis subcordatisque grosse crenato-dentatis (pollicaribus, cum petiolo gracili), floralibus sessilibus lanceolatis floribus sessilibus plerumque brevioribus; spica interrupta angusta; calycis dentibus subulatis tubo campanulato subdimidio brevioribus; corolla (rubra? tantum semipollicari,) tubo gracili calyce subduplo longiori, labio superiori quam inferius breviori. — W. Texas, in the crevices of rocks on the Limpio, Wright (no. 1535), Bigelow, ex Torr. Bot. Mex. Bound. p. 134, where it is doubtfully referred to *S. coccinea.* Color of corolla not recorded, seemingly not scarlet.

TRICHOSTEMA ARIZONICUM. Puberulum, multicaule e radice vel caudice ligneo perenni; ramis simpliciusculis (semi-sesquipedalibus); foliis ovalibus ovatisque breviter petiolatis, floralibus parvis pedunculis racemosis gracilibus cymoso 3-5-floris 2-3-plo brevioribus; calyce campanulato subæqualiter 5-fido æquali, lobis ovato-lanceolatis corollæ tubum adæquantibus; lobis corollæ spathulato-oblongis declinatis. (Pedunculi circa pollicares: bractæ minutæ: filamenta subpollicaria.) *T. dichotomun* Torr. Bot. Mex. Bound. l. c., non L. — S. borders of Arizona, on the slopes of the Chiricahui Mountains, Wright, no. 1541.

TEUCRIUM LACINIATUM Torr., referred of late by Dr. Torrey to *T. Cubense* L., which is also from Texas, appears to be quite clearly distinguished, by a lignescent perennial root, finely divided leaves which are usually somewhat scabrous-pubescent, larger corolla, and minutely reticulate (rather than punctate) nutlets destitute of longitudinal thickened ribs.

2. *Determination of a Collection of Plants made in Oregon by* ELIHU HALL *during the summer* of 1871, *with Characters of some New Species and various Notes.*

1. CLEMATIS LIGUSTICIFOLIA Nutt. in Torr. & Gray, Fl. 1, p. 9.

0. THALICTRUM OCCIDENTALE, n. sp. *T. dioico* simile: stigmate longiori; carpellis elongatis (maturis ad semipollicarem usque) fusiformibus parum inæquilateris subangulatis costis acutissimis 8 – 10 percursis acuminatis, stipite brevissimo seu vix ullo. — I have a fruiting specimen of this from the Kew distribution of the collections of the British Oregon Boundary Commission, ticketed Vancouver's Island, Dr. Lyall and C. B. Wood; and a memorandum notes that Dr. Engelmann's herbarium contains a specimen of the same, collected in Montana by Professor Swallow. In the present collection made by Mr. Hall two or three fruiting specimens also occur. There are from 5 to 10 or 12 carpels to a flower, of which a few only seem to mature. The contrast between the short ovary and the long fruit is remarkable. To this may belong a specimen of Nuttall's collection, named *T. heterophyllum*, in flower only, and a similar one in Mr. Spalding's Clearwater collection. But materials are wanting for the identification.

2. ANEMONE DELTOIDEA Hook. Fl. Bor.-Am. t. 3. In fruit.

3. TRAUTVETTERIA PALMATA Fisch. & Meyer.; forma OCCIDENTALIS, *T. grandis* Nutt.

4. RANUNCULUS (BATRACHIUM) HETEROPHYLLUS Weber.; the larger specimens (4^a) nearly equalling the var. *peltatus* (*R. peltatus* Schrank): new to this country.

5. RANUNCULUS CYMBALARIA Pursh. Fl. p. 392.

0. RANUNCULUS ALISMÆFOLIUS Geyer, a large form. For this, or rather for the dwarf and slender form, my var. *alismellus*, there is apparently an earlier name, *R. Pseudo-Hirculus* Schrenk, Enum. Pl. Nov. 2, p. 65 (from Moscow Bulletin), 1842, which is not mentioned in Walpers and has been totally overlooked. Professor Godet kindly called my attention to it, and pronounced it the same as Bolander's no. 6258.

6. RANUNCULUS FLAMMULA L. Here we have for the first time in this country specimens of genuine *R. Flammula* which in size and luxuriance fully equal the largest European forms; also (6^a) very luxuriant specimens of the var. INTERMEDIUS.

7. RANUNCULUS ORTHORHYNCHUS Hook. Fl. Bor.-Am. 1, p. 21, t. 9. The figure admirably represents this species, which is as rare in collections as it is well marked in character. But the var. *alpinus* of S. Watson, in King's Exploration on the Fortieth Parallel, is manifestly a form of my *R. adoneus,* with less rounded petals. The Rev. Edward L. Greene likewise collected it on the higher mountains in Colorado. To *R. orthorhynchus,* on the other hand, clearly belongs Lyall's plant from Washington Territory, referred to by Mr. Watson as *R. fascicularis.**

8. RANUNCULUS NELSONII Gray, which has been confounded with *R. Occidentalis* Nutt.; and (9), its more slender variety, *R. tenellus* Nutt., which would seem to be distinct in its perfectly smooth fruit and less elongated persistent style, but is connected by transitional specimens. The synonymy is given in the subjoined foot-note.†

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* *Ranunculus fascicularis,* it may be noted, is an Eastern species, a good deal confused from the first, and not extending beyond or even to the Rocky Mountains. What has been so called from California is probably *R. Californicus* Benth. Mr. Watson's plant in King's Exploration is undeterminable. And Muhlenberg himself confounded his species with early states of the hairy form (*R. hispidus* Muhl.) of that polymorphous species which we refer to *R. repens* L., the limits of which it is still a problem to define. To this belongs the *R. fascicularis* of Schlechtendal (Animad. Ranun. 2, p. 30, t. 2), described and figured from specimens sent by Muhlenberg to Willdenow, and also *R. Schlectendalii* Hook. Fl. Bor.-Am., founded on specimens gathered by Drummond on the eastern slope of the Rocky Mountains, which were truly identified with Schlechtendal's figure; yet the *R. hispidus* of the same work is only a more developed state of it. *R. fascicularis* Muhl. fortunately was *first published* by Bigelow, in the *Florula Bostoniensis* (ed. 1, 1814), on a plant so named by Muhlenberg, identical with that figured by Hooker (tab. 8), and in my Genera Illustrata (tab. 9); to this must pertain the name, whatever else Muhlenberg may have had in view notwithstanding.

† *Ranunculi Oncostyli,* nempe achenio plano-compresso pl. m. marginato stylo recurvo-uncinato persistente superato.

* *Macranthi,* petalis (5 – 12) semipollicaribus aureis; stylo subulato brevi.

R. CALIFORNICUS Benth. Pl. Hartw. p. 295. *R. dissectus* Hook. & Arn. Bot. Beech. p. 316, non Bieb. *R. delphinifolius?* Torr. & Gray, Fl. 1, p. 659, non HBK. *R. canus* Torr. Bot. Whippl. p. 6. — California, extending to Oregon.

10. Isopyrum Hallii, n. sp. Elatum; caule 1–2-pedali) superne bifoliato; foliis amplis triternatis summove biternato; foliolis obovato-cuneatis (sesqui–bipollicaribus) irregulariter trifidis apice incisis; floribus in pedunculo communi elongato nudo vel folioso-bracteato nunc bifido pluribus umbellatim dispositis; sepalis 5 obovatis stamina numerosissima haud superantibus; filamentis apice clavatis; petalis nullis;

R. occidentalis Nutt. in Torr. & Gray, Fl. 1, p. 22, excl. char. pro parte. *R. hispidus* Hook. Fl. Bor.-Am. p. 19, pro parte. — Oregon, British Columbia, Sitka. Nuttall's species was founded, as his specimens testify, upon the large-flowered and usually very shaggy-hairy plant, which is not uncommon on the Western coast, although seldom collected in fruit (I have ripe carpels only in a specimen collected by Burke); but the description of it somehow got badly mixed up with the *R. recurvatus* of Bongard, and Nuttall's own *R. tenellus*, i. e. with the following species. To this pertains all that relates to the long style, comparatively small narrow petals, &c.

Var. canus. *R. canus* Benth. Pl. Hartw. p. 294. — California, in moist valleys of the Sacramento. Evidently a more canescent form of the present species. I have not seen the fruit, nor any other specimens answering to Hartweg's no. 1626. The specimens of Bigelow's Bot., Whipple's Expedition, referred to *R. canus*, probably belong to *R. Californicus.*

* * *Micranthi*, petalis (5) haud ultra lineas 3 longis angustis luteis; stylo elongato.

+ *Occidentales;* foliis supremis vel segmentis lanceolatis integerrimis; petalis calycem excedentibus; carpellis in capitulo 10–20.

R. Nelsonii. *R. recurvatus* var. *Nelsonii* DC, Syst. 1, p. 290. *R. recurvatus* Bong. Veg. Sitcha, p. 123, non Poir. *R. occidentalis* Torr. & Gray, l. c. pro parte. — Oregon to Sitka. Forma typica; foliis latioribus; acheniis pilis parcis rigidis pl. m. conspersis nunc glabratis stylum ejusdem longitudinis maxime uncinatum gerentibus.

Var. tenellus gracilior; foliis parvulis, lobis angustioribus; stylo quam achenium læve breviore. *R. tenellus* Nutt. in Torr. & Gray, l. c. — Northern California (Bolander) to Vancouver's Island, &c. There is a *R. tenellus* of Viviani, from Egypt, perhaps of earlier date than Nuttall's, which, though overlooked by Boisser, may claim to be used. Nuttall's name is not a good one for the whole species as now regarded; and his character is somewhat misleading as to "flowers minute" (the petals are sometimes a quarter of an inch long), and very much so as to the "minute style." The style is, indeed, less prolonged than in what I take for the type of the species; and this with the smoothness of the achenium and something in the habit of the plant might forbid the union: but there are transitions between the two forms.

+ + *Orientales;* foliis amplioribus; petalis calyce brevioribus; carpellis plurimis in capitulo denso.

R. recurvatus Poir. — Canada to Florida.

carpellis 3 – 5 ovatis brevistylibus 2 – 4-ovulatis; seminibus rugulosis. — A most distinct and much the largest and handsomest species of this genus; the flowers individually about as large as those of *I. biternatum*, but 6 to 10 together in an umbelliform often once or twice bifid cyme, and with the very numerous and conspicuous filaments as white as the sepals, and resembling those of *Trautvetteria.*

11. CALTHA LEPTOSEPALA DC. In flower and fruit.

12. COPTIS ASPLENIFOLIA Salisb. In fruit.

13. AQUILEGIA FORMOSA Fischer. Whether to be regarded as a variety of *A. Canadensis* is uncertain.

14. DELPHINIUM MENZIESII DC. The seeds will clearly distinguish all forms of this from the Eastern *D. tricorne.*

15. DELPHINIUM TROLLIIFOLIUM, n. sp. Subglabrum vel tenuiter pilosulum; caule laxo (bipedali et ultra); foliis sparsis longe petiolatis, petiolis basi subdilatatis, lamina circumscriptione orbiculata profunde 5 – 7-fida, segmentis cuneatis trifidis pauci-incisisque, lobulis obtusis (mucronulo calloso quasi truncato apiculatis); racemo sparsiflora perlaxo; pedicellis adscendenti-patentibus, inferioribus præsertim elongatis; calcare sepalis petala superantibus longiore; petalis superioribus integris albis, inferioribus subquadratis emarginato-bifidis erosis vel crenato-dentatis; folliculis oblongis glabris laxe reticulatis demum recurvo-patentibus; seminibus vertice scarioso-coronatis. Leaves in the dried specimens thin, 2 or 3, or the largest 4 or 5, inches in diameter, in outline and division reminding one of *Trollius.* Lower pedicels 2 or 3, or in fruit sometimes 4, inches long. Flowers blue, except the upper petals: spur three fourths of an inch long.

16. ACTÆA SPICATA L. var. RUBRA Michx., the *A. arguta* Nutt.

17. CIMICIFUGA (PITYSOSPERMA) ELATA Nutt. in Torr. & Gray, Fl. 1, p. 36. *C. fœtida* Pursh, non L. This is exactly a *Pityrosperma* of Zuccarini, and apparently between *P. acerinum* (which only I have a specimen of) and *P. biternatum.* In the whole structure of carpels (from one to three in number) and seeds it well unites *Macrotys* with *Cimicifuga* proper.

18. BERBERIS (MAHONIA) AQUIFOLIUM Pursh, Fl. 1, p. 219, t. 4.

19. BERBERIS (MAHONIA) NERVOSA Pursh, l. c. t. 5.

20. VANCOUVERIA HEXANDRA Decaisne. *Epimedium hexandrum* Hook. Fl. Bor.-Am. t. 13. The ovules, commonly "8 – 10," are sometimes as few as three, or even two, at least in Californian specimens.

21. Achlys triphylla DC.; Hook. l. c. t. 12. Specimens chiefly with mature fruit. The pericarp, when dry somewhat quasi-cælospermous, is certainly not " bivalvatim dehiscens " nor really dehiscent at all. The whole dorsal portion, of a chestnut-brown color, is almost cartilaginous; the ventral portion thin, membranaceous, and strongly concave or cupped, with a fleshy central ridge, which when soaked, and probably in the fresh state, swells up very much and fills the concavity. This pulpy portion might be likened to the thickened placenta of *Podophyllum.* The seed, however, does not rise from it, but from the base of the cell.

22. Brasenia peltata Pursh. The only specimens seen from the Pacific side of the continent, except those collected in Wilkes's Exploring Expedition.

0. Nuphar polysepalum Engelm. in Trans. Acad. St. Louis.

23. Eschscholtzia Californica, var. Douglasii Torr. & Gray: chiefly small-flowered forms.

24. Dicentra formosa DC. Apparently not distinct from the Eastern *D. eximia.*

25. Nasturtium curvisiliqua Nutt. in Torr. & Gray, l. c. Char. to be altered, and species to include at least *N. polymorphum* Nutt., a better name for it. Forms, with slender pod and sometimes slender pedicel, the style very short but distinct (25): with shorter narrow pod on short pedicel (26): with thicker pod on short pedicel, nearly or quite the same as *N. lyratum* Nutt. (27).

28. Nasturtium palustre DC.: the ordinary European form. — N. 4, of Lyall's collection on the 49th parallel, with pods too long for *N. palustre,* is exceeded in this respect by the plant from the same district, (wrongly) named *N. lyratum* in the 12th volume of the Pacific Railroad Explorations, which again comes near *N. montanum* Wall., a species which on the Asiatic side occurs as far north as Corea.

29. Cardamine cordifolia Gray Pl. Fendl. p. 8. Form with weaker stem and ampler leaves, of round-cordate or almost reniform outline, bearing therefore a closer resemblance to *C. asarifolia,* but the less dentate leaves, short style, and smaller stigma distinguish it. Watson's specimens from Utah and Nevada are intermediate between these and Fendler's original plant.

30. Cardamine angulata Hook. Bot. Misc. 1, p. 243, t. 69.

31. Cardamine oligosperma Nutt. in Torr. & Gray, l. c. Apparently a good species. Radical leaves often simple.

32. CARDAMINE HIRSUTA L.: an ordinary form; with some of a slender small-leaved variety, named by Nuttall *C. microphylla.*

33. ARABIS HIRSUTA Scop.; the western form; and A. PERFOLIATA Lam., the form which is *Turritis macrocarpa* Nutt., sparingly collected.

34. THELYPODIUM LACINIATUM Endl. (*Macropodium* Hook.) In fruit.

35. ERYSINUM ASPERUM DC., var. *E. elatum* Nutt. l. c.

36. SISYMBRIUM DEFLEXUM Harvey; Torr. Bot. Whippl. p. 10. With mature fruit.

37. LEPIDIUM MENZIESII DC.; Hook. Fl. Bor.-Am. 1, p. 68.

38. THYSANOCARPUS CURVIPES Hook. l. c. p. 69, t. 18.

39. THYSANOCARPUS PUSILLUS Hook. Ic. t. 43, which includes *T. oblongifolius* Nutt.

40. CLEOME LUTEA Hook. Fl. Bor.-Am. 1, p. 70, t. 25.

41. VIOLA BLANDA Ait.; apparently, but wholly in fruit.

42. VIOLA CANINA L., var. *V. adunca* Smith; Hook. 1, p. 79.

43. VIOLA NUTTALLII Pursh.; Hook. l. c. t. 26. Mostly in fruit.

44. VIOLA SARMENTOSA Dougl. in Hook. l. c. Small form, in fruit.

45. VIOLA GLABELLA Nutt. in Torr. & Gray, l. c. Too near *V. pubescens.*

46. VIOLA HALLII, n. sp. *Melanium*, glabra, ut videtur perennis; caulibus e surculo gracili adscendentibus spithamæis a basi foliatis; foliis trisectis, segmentis in petiolum longum rhachinque decurrentibus cuneatis trifidis (lateralibus quandoque lanceolatis subintegris), lobis lanceolatis sæpius integerrimis; stipulis foliaceis lanceolatis oblongisve sublaciniatis, uno sæpissime multo minore integerrimo; petalis 3 luteis quorum lateralibus basi tenuiter barbatis, 2 superioribus atro-violaceis; calcare brevissimo. — Most unexpected as a North American species, and a striking and handsome one, with the flower of a Pansy; the petals half an inch or more in length. Style clavate, the large almost regular stigma bearded all round. Near Salem.

47. HYPERICUM ANAGALLOIDES Cham. & Schlecht. in Linnæa, 3, p. 127.

48. HYPERICUM SCOULERI, Hook. Fl. Bor.-Am. 1, p. 111.

49. ELATINE AMERICANA Arn. *Crypta minima* Nutt.

50. SILENE DRUMMONDII, Hook. Fl. Bor.-Am. — Two or three

specimens were gathered, in cemetery grounds near Salem, of what seems to be *S. Bolanderi* Gray, Proceed. Acad. 7, p. 330.

51. SILENE MENZIESII Hook. l. c. p. 99, t. 30.

51ª. ARENARIA (MŒHRINGIA) MACROPHYLLA Hook. l. c. t. 37.

52. ARENARIA TENELLA Nutt. in Torr. & Gray, Fl. p. 179.

53. STELLARIA MEDIA L. Apparently indigenous.

54. STELLARIA CRISPA Cham. & Schlecht. in Linnæa, 1, p. 51.

55. STELLARIA BOREALIS Bigelow, var. COROLLINA Fenzl in Ledeb. Fl. Ross. *S. alpestris* Fries. The same collected at Lake Superior by Dr. Robbins.

56. STELLARIA NITENS Nutt. in Torr. & Gray, Fl. l. c.

57. CERASTIUM VULGATUM L. Apparently an indigenous form.

58. SAGINA LINNÆI Presl. A little *S. procumbens* L. also collected.

59. SPERGULARIA MEDIA Presl. the form called *Lepigonum leiospermum* by Kindberg; and 60, S. RUBRA Presl.

61. MOLLUGO VERTICILLATA L.

62. CLAYTONIA SIBIRICA L. *C. alsinoïdes* Sims. A larger and a smaller form.

63. CLAYTONIA PERFOLIATA Donn. 64. A depauperate variety, the *C. parviflora* Dougl.

65. CLAYTONIA CHAMISSONIS Eschsch. *C. flagellaris* Bongard and *C. aquatica* Nutt. 66. Var. TENERRIMA, an exceedingly depauperate and slender form of this species.

67. CLAYTONIA LINEARIS Hook. Fl. Bor.-Am. t. 71. 68. A form larger in all its parts, the seeds a full line in diameter.

69. CLAYTONIA PARVIFOLIA Moçino. *C. filicaulis* Hook. l. c. t. 72. — *C. diffusa* Nutt. in Torr. & Gray Fl. is an interesting species of the region yet to be rediscovered.

70. SPRAGUEA UMBELLATA Torr. Pl. Fremont, t. 1. New to Oregon.

71. SIDALCEA MALVÆFLORA Gray, Pl. Fendl., & Pl. Wright: two or three forms.

72. GERANIUM CAROLINIANUM L. 73. G. INCISUM Nutt. in Torr. & Gray, l. c. 73ª. ERODIUM CICUTARIUM L'Her.

74. OXALIS OREGANA Nutt. in Torr. & Gray, l. c. 75. O. CORNICULATA L.

76. PACHYSTIMA MYRSINITES Raf. *Myginda myrtifolia* and later *Oreophila myrtifolia* Nutt.

77. RHAMNUS PURSHIANUS DC.; Hook. l. c. t. 43.

78. CEANOTHUS VELUTINUS Dougl. in Hook. l. c. t. 45. In fruit.

79. CEANOTHUS OREGANUS Nutt. in Torr. & Gray, Fl. 1, p. 265.

80. ACER MACROPHYLLUM Pursh, and 81. A. CIRCINATUM Pursh; both in fruit.

82. RHUS DIVERSILOBA Torr. & Gray, l. c. *R. lobata* Hook. l. c. t. 46. In fruit and flower.

83. THERMOPSIS FABACEA R. Br., var. MONTANA Gray. *T. montana* Nutt. in Torr. & Gray.

84. LUPINUS BICOLOR Lindl., which is likewise *L. micranthus* Dougl.

85. LUPINUS POLYPHYLLUS Lindl. Bot. Reg. t. 1097.

86. LUPINUS LATIFOLIUS Agardh, Syn. Lup.; a variety, or some species near it.

87. LUPINUS LEUCOPHYLLUS Lindl. Bot. Reg. t. 1124.

88. LUPINUS ORNATUS Dougl., and 89, L. FOLIOSUS Nutt., in small quantity.

90. LUPINUS LAXIFOLIUS Dougl., by the calyx; but a remarkable, rather densely flowered variety.

91. LUPINUS PARVIFLORUS Nutt. in Torr. & Gray, Fl. 1, p. 375.

92. LUPINUS MINIMUS Dougl. in Hook. Fl. Bor.-Am. 1, p. 163.

93. LUPINUS HOLOSERICEUS Nutt. in Torr. & Gray, Fl. 1, p. 380. In fruit.

94. TRIFOLIUM ERIOCEPHALUM Nutt. in Torr. & Gray, Fl. 1, p. 313.

95. TRIFOLIUM MACRÆI Hook. & Arn. Bot. Beech. *T. albopurpureum* Torr. & Gray, l. c.

96. TRIFOLIUM CILIOLATUM Benth. Pl. Hartw. Not before found north of California. The rhachis is often prolonged into a filiform tip, projecting much beyond the head.

97. TRIFOLIUM GRACILENTUM Torr. & Gray, l. c.: a slender variety.

98. TRIFOLIUM CYATHIFERUM Lindl.; Hook. Fl. Bor.-Am. t. 50.

99. TRIFOLIUM MICRODON Hook. & Arn. Bot. Beech. t. 79.

100. TRIFOLIUM MICROCEPHALUM Pursh; Torr. & Gray, l. c.

101. TRIFOLIUM PAUCIFLORUM Nutt. in Torr. & Gray, l. c.

102. TRIFOLIUM FIMBRIATUM Lindl. Bot. Reg. t. 1070; small forms, with broad leaflets. 103. Var. ANGUSTIFOLIUM. *T. tridentatum* Lindl. Bot. Reg.

104. GLYCYRRHIZA LEPIDOTA Nutt.; Bot. Mag. t. 2050. Chiefly in fruit.

105. PSORALEA LANCEOLATA Pursh. Fl. 2, p. 475; Hook. Fl. Bor.-Am. p. 135, t. 51.

106. PSORALEA PHYSODES Dougl. in Hook. l. c.*

107. HOSACKIA DECUMBENS Benth.; Torr. & Gray, l. c. p. 324.

108. HOSACKIA CRASSIFOLIA Benth.; Gray, Rev. p. 350. *H. stolonifera* Lindl. Bot. Reg. t. 1977.

109. HOSACKIA BICOLOR Dougl.; Lindl. Bot. Reg. t. 1257.

110. HOSACKIA GRACILIS Benth.; a depauperate form.

111. HOSACKIA PARVIFLORA Benth.; Gray, Rev. p. 351.

112. HOSACKIA (MICROLOTUS) PURSHIANA Benth., a pubescent form: also, 113, an almost glabrous variety, *H. elata*, var. *glabra* Nutt. in Torr. & Gray, l. c.

114. VICIA GIGANTEA Hook. Fl. Bor.-Am. 1, p. 157.

115. VICIA OREGANA Nutt. in Torr. & Gray, l. c. A form of *V. Americana*, apparently; very variable in the foliage; passing into 116, V. TRUNCATA Nutt. and V. SPARSIFLORA Nutt. l. c., the latter with all the leaves linear and narrow.

117. LATHYRUS TORREYI Gray, Proc. Am. Acad. 7, p. 337.

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* I here append the characters of an interesting addition to a chiefly Eastern North American genus, viz.: —

PETALOSTEMON SEARLSIÆ, n. sp.: perennis? præter spicam glaberrimus; foliis 5 – 7-foliolatis cum caule ramisve simplicibus grosse glandulosis; foliolis oblongo-linearibus obtusis vel retusis crassiusculis; spica longiuscule pedunculata cylindrica compacta; bracteis ovatis membranaceis pauci-glandulosis in acumen caudiforme calycem adæquantum productis sericeo-ciliatis deciduis; calycis dentibus attenuato-subulatis mollissime villosis tubo minus pubescente æquilongis; petalis roseo-purpureis præter vexillum deltoideo-cordatum angusto-oblongis. — The only other species found west of the Mississippi Valley is the *P. exile* of Wright's collection, from Arizona. This is from a similar region farther north; viz., from the Pahranagat Mountains in southeastern Nevada (about 400 miles southwest of Salt Lake), where it was discovered by Miss Searls. It was one of an extremely interesting collection made by this young lady in the vicinity of the Pahranagat mines (which she visited in company with her father), and entrusted to me by Professor Marcy of Evanston, Ill. A lady who braves the hardships of a journey to such a remote and inhospitable district, and has the sense and spirit to make a collection of plants in a place far out of the track of any botanist, well deserves to have her name perpetuated in the annals of botany. I give it accordingly with much satisfaction to one of the two entirely new plants of the collection.

For others, see succeeding notes, e. g. *Œnothera*, *Chænactis*, *Pentstemon*, &c.

118. LATHYRUS VENOSUS var? Torr. & Gray, l. c. *L. pubescens* Nutt. l. c.; but mainly glabrous. Fruiting specimens.

119. LATHYRUS POLYPHYLLUS Nutt. in Torr. & Gray, l. c.

120. PRUNUS (CERASUS) MOLLIS, Dougl. in Hook. l. c. This is probably *P. erecta* Presl, Epimelia, p. 194.

121. PRUNUS VIRGINIANA L. var., the *Cerasus demissa* Nutt. in Torr. & Gray, Fl. 1, p. 411, which is commonly thought distinct by those who have seen it living.

122. NUTTALLIA CERASIFORMIS Torr. & Gray, Fl. 1, p. 412. In fruit.

123. SPIRÆA OPULIFOLIA L.; a Western, but nearly glabrous form.

124. SPIRÆA BETULÆFOLIA Pallas; a small-leaved form. Also, 125, var. ROSEA, with rose-red corolla, found likewise in California.

126. SPIRÆA DOUGLASII Hook. l. c.; Bot. Mag. t. 5151.

127. SPIRÆA MENZIESII Hook. l. c.

128. SPIRÆA ARIÆFOLIA Smith; Hook. l. c.

129. GEUM MACROPHYLLUM Willd.; Torr. & Gray, Fl. 1, p. 421. Referred to *G. Japonicum* by Scheutz in his recent monograph; but the identification is not wholly satisfactory. See Amer. Jour. Science, April, 1872, p. 306.

130. ALCHEMILLA OCCIDENTALIS Nutt. in Torr. & Gray, Fl. 1, p. 421.

131. POTERIUM ANNUUM Nutt. in Hook. l. c. *Sanguisorba annua* Nutt. in Torr. & Gray, l. c.

132. POTERIUM OFFICINALE, i. e. *Sanguisorba officinalis L.* Already found both north and south of Oregon.

133. HORKELIA CONGESTA Hook. Bot. Mag. t. 2880.

134. POTENTILLA GLANDULOSA Lindl. Bot. Reg. t. 1583.

135. POTENTILLA DIVERSIFOLIA Lehm. in Hook. l. c.

136. POTENTILLA GRACILIS Dougl., Hook. Bot. Mag. t. 2984.

137. FRAGARIA VESCA L., the var. γ. Torr. & Gray, Fl. 1, p. 448.

138. RUBUS NUTKANUS Moçino. One or two specimens displayed rose-red flowers, like those of its Eastern analogue, *R. odoratus*, but the tinge was slight when fresh, according to Mr. Hall.

139. RUBUS SPECTABILIS Pursh, Fl. 1, t. 16; the Salmon-Berry.

140. RUBUS PEDATUS Smith Ic. Ined. t. 63. *Comaropsis pedata* DC. Prodr.

141. RUBUS LEUCODERMIS Dougl.; Torr. & Gray, l. c. In fruit.

142. Rubus macropetalus Dougl. in Hook. l. c. t. 59.

143. Rosa gymnocarpa Nutt. in Torr. & Gray, l. c. p. 461.

144. Rosa blanda Ait.? Chiefly, at least the fruiting specimens, of the form (if such it be) answering to *R. Woodsii* Lindl. Ros. & Bot. Reg. t. 976. Fruit subdepressed-globose, with no neck at all; until full-grown with the calyx-lobes spreading, then apparently ascending or erect. *R. fraxinifolia* of Watson in King's Exploration is the same with larger fruit. — A small quantity, insufficient for distribution, was collected, of a common Nevadan and Californian Rose, Mr. Watson's *R. blanda.* This has smaller flowers, stipular prickles when present inclined to curve, the calyx-tube with a contracted neck, and an ovoid-globular fruit, about 5 lines long when full grown, the persistent calyx-lobes tardily ascending or at length conniving. I do not know this in North-eastern America, to which *R. blanda* proper belongs. I take it to be Chamisso and Schlechtendal's *R. Californica.*

145. Rosa pisocarpa, n. sp. Gracilis, aut inermis aut aculeis substipularibus acicularibus tenuibus rectis nunc paucisque minimis petiolaribus munitis; corymbo pauci-plurifloro bracteoso; calycis lobis (extus glandulosis intus cano-tomentosis) e basi ovata in acumen sæpius gracile sursumque lanceolato-dilatatum productis, tubo glabro primum urceolato, fructifero fere globoso (pisi magnitudine) basibus tantum loborum persistentibus arcte reflexis coronato; pedunculis fructiferis nutantibus; — cæt. præcedentis vel *R. blandæ* forma minoris. Petala læte rosea, obcordata, lin. 6 – 8 longa. Foliola semipollicaria ad pollicaria.

146. Rosa Kamtschatica Vent. Cels. t. 67. In fruit only; the strong shoots densely setose, and with immense dilated aculei. One or two smooth specimens also collected. An intermediate form is in Dr. Lyall's collection, from Vancouver's Island. The *R. cinnamonea* in Pl. Hartweg, to which Ventenat's plant is referred as a synonyme, is wholly different, and apparently *R. Californica,* Cham. & Schlecht.

147. Pyrus rivularis Dougl.; Hook. Fl. Bor.-Am. t. 68.

148. Pyrus (Sorbus) sambucifolia Cham. & Schlecht. In fruit.

149. Amelanchier Canadensis var. alnifolia Torr. & Gray, Fl. 1, p. 473. In fruit.

150. Saxifraga integrifolia Hook. Fl. Bor.-Am. 1, p. 249, t. 86.

151. Saxifraga Virginiensis Michx.; a very tall form.

152. SAXIFRAGA HETERANTHA Hook. l. c. t. 78. A very distinct species, although considered to be a variety of the next in Torrey and Gray's Flora.

153. SAXIFRAGA PUNCTATA L. *S. æstivalis* Fischer; Torr. & Gray, Fl. &c.

154. SAXIFRAGA TOLMÆI Torr. & Gray, Fl. 1, p. 567. A few specimens.

155. SAXIFRAGA CÆSPITOSA L.; Hook. Fl. Bor.-Am. l. c.

156. SAXIFRAGA ELEGANS Nutt. in Torr. & Gray, Fl. 1, p. 573. Beautiful and abundant specimens, some of them many times larger than Nuttall's. Judging from these specimens the species may well deserve the name.

157. BOYKINIA OCCIDENTALIS Torr. & Gray, Fl. 1, p. 577 & p. 698. 158. Var. ELATA. *Saxifraga elata* Nutt. l. c.

159. HEUCHERA MICRANTHA Dougl. in Bot. Reg. t. 1302; Hook. Fl. Bor.-Am. l. c.

160. HEUCHERA CYLINDRICA Dougl. in Hook. l. c.; Bot. Reg. t. 1924.

161. TOLMIEA MENZIESII Torr. & Gray, Fl. 1, p. 582. An interesting plant, rarely collected.

162. TELLIMA GRANDIFLORA Dougl. in Bot. Reg. t. 1178.

163. MITELLA CAULESCENS Nutt. in Torr. & Gray, Fl. 1, p. 586.

164. MITELLA TRIFIDA Graham; Hook. Fl. Bor.-Am. t. 82.

165. TIARELLA TRIFOLIATA L.; Pursh, Fl. 1, p. 313.

166. TIARELLA UNIFOLIATA Hook. Fl. Bor.-Am. 1, p. 238, t. 81.

167. PHILADELPHUS LEWISII Pursh, Fl. 1, p. 329.

168. RIBES DIVARICATUM Dougl.; Lindl. Bot. Reg. t. 1359. In fruit.

169. RIBES SETOSUM Dougl. in Hook. l. c.; a variety of *R. lacustre* Poir. In fruit.

170. RIBES SANGUINEUM Pursh, Fl. 1, p. 164.

171. RIBES BRACTEOSUM Dougl. in Hook. l. c.

172. SEDUM SPATHULIFOLIUM Hook. Fl. Bor.-Am. 1, p. 227.

173. TILLÆA ANGUSTIFOLIA Nutt. in Torr. & Gray, Fl. 1, p. 558.

174. MYRIOPHYLLUM HIPPUROIDES Nutt. in Torr. & Gray, Fl. 1, p. 530.

175. EPILOBIUM ANGUSTIFOLIUM L.

176-8. EPILOBIUM TETRAGONUM L., or allied species, in several forms.

179. Epilobium alpinum L., or nearly allied to it. 180. A form near it in fruit.

181. Epilobium minutum Lindl. in Hook. l. c.

182. Epilobium paniculatum Nutt. in Torr. & Gray, Fl. 1, p. 490.

183. Gayophytum Nuttallii Torr. & Gray, Fl. 1, p. 514, with rather slender pedicels.

184. Œnothera albicaulis Nutt. in Fraser, Cat. & Gen.*

185. Œnothera (Boisduvalia) densiflora Lindl. Bot. Reg. t. 1593. 186. A more villous form. 187. A narrow-leaved and strict variety. *Œ. imbricata* Nutt. in herb. 188. A less pubescent, narrow-leaved, slender variety. *Œ. salicina* Nutt. in Torr. & Gray, l. c. 189. Var. tenella: a depauperate and very small-flowered canescently villous form.

190. Œnothera (Boisduvalia) glabella Nutt. in Torr. & Gray, l. c.

191. Œnothera Lindleyi Dougl.; Bot. Mag. t. 2832.

192. Œnothera, one of the Oregon Godetias which have been referred to *Œ. tenella.*

193. Œnothera purpurea Curtis Bot. Mag. t. 352, a small-flowered form, which includes *Œ. lepida* and *Œ. quinquevulnera?* 194. A depauperate small-flowered variety of the same.

195. Gaura parviflora Dougl. in Hook. Fl. Bor.-Am. 1, p. 208.

196. Ludwigia palustris Ell. *Isnardia palustris L.*

197. Circæa pacifica Ascherson & Magnus in Bot. Zeit. 1871, p. 392. Same as Bolander's and Lyall's plants from which the species is described, and as *C. Lutetiana* var. *occidentalis* of Nuttall in herb.; but allied to *C. alpina.*

198. Echinocystis fabacea Decaisne. *Sicyos Oreganus* Torr. & Gray, Fl. 1, p. 542. Very fine specimens of this, the Oregon form of *Megarrhiza* Torr., which may fairly claim generic rank.

199. Mentzelia lævicaulis Torr. & Gray, Fl. 1, p. 535. *Bartonia lævicaulis* Dougl.; Hook. l. c. t. 69.

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* Œnothera brachycarpa Gray, Pl. Wright, 1, p. 70, and 2, p. 57, was among the interesting plants collected by Miss Searls in the Pahranagat Mountains, Nevada. It is the *Œ. marginata* var. *purpurea* of S. Watson in King's Expedition, but is very different from *Œ. cæspitosa* Nutt. (the oldest name of the species which is to comprise *Œ. marginata, montana,* and *eximia,* doubtless well combined by Mr. Watson), as the fruit demonstrates. The corolla, instead of pale yellow turning rose-color, is now known to be white with a purple tinge from the first.

200. ERYNGIUM PETIOLATUM Hook., var. JUNCIFOLIUM: gracile, subsesquipedale; petiolis longissimis nodoso-articulatis, radicalibus (6–10 poll. longis) nunc aphyllis nunc lamina parva (pollicari) lanceolata superatis; capitulis parvulis. — Hooker's species must include his *E. articulatum* in Pl. Geyer., as well as the present slender form of it, the petioles of which imitate those of one of the nodose *Junci*. Nuttall collected the same plant on the Willamette.

201. SANICULA MENZIESII Hook. & Arn.; Hook. Fl. Bor.-Am. 1, p. 258, t. 90.

202. SANICULA BIPINNATIFIDA Dougl. in Hook. l. c. t. 92.

203. CARUM GAIRDNERI Benth. & Hook. *Atænia* Hook. & Arn. *Edosmia* Nutt.

204. ŒNANTHE SARMENTOSA Nutt. in Torr. & Gray, Fl. 1, p. 617.

205. CRANTZIA LINEATA Nutt. Remarkably fine and large specimens, with ripe fruit.

206. PIMPINELLA APIODORA Gray, Proc. Am. Acad. 7, p. 345: var. NUDICAULIS: parvula; caule scapiformi subaphyllo vix pedali. Apparently a small and high-mountain form of the Californian species; in flower only.

207. LIGUSTICUM (CYNAPIUM) APIIFOLIUM, Gray, l. c. p. 347.

208. ANGELICA GENUFLEXA Nutt. in Torr. & Gray, Fl. 1, p. 620, ex. char. With immature fruit.

209. FERULA (LEPTOTÆNIA) DISSECTA Gray, l. c. In fruit.

0. PEUCEDANUM MACROCARPUM Nutt. in Torr. & Gray, l. c. Two or three specimens of the true plant, with ripe fruit, 8 lines long and less than 3 lines wide, including the wing, which on each side is about the width of the disk. — 210. Var.? EURYCARPUM: fructus lato-elliptici alis tenuibus utrinque disco latioribus. Specimens with mature fruit only, in some 8 lines long and with the wing fully 2 lines wide on each side; probably a state of this species, certainly so, if Torrey's var. *platypterum* is, but that remains very doubtful; in other specimens half an inch long, and the wing a line and a half wide: this approaches *P. millefolium* S. Watson.

211. PEUCEDANUM NUDICAULE Nutt. l. c. *Smyrnium nudicaule* Pursh?

212. PEUCEDANUM UTRICULATUM Nutt. in Torr. & Gray, l. c.

213. PEUCEDANUM TRITERNATUM Nutt. l. c. *Seseli triternatum* Pursh; Hook. l. c. t. 94.

214. PEUCEDANUM LEIOCARPUM Nutt. l. c. *Seseli leiocarpum* Hook. l. c. t. 93.

215. SIUM LINEARE Michx.; Gray Man. ed. 5, p. 196.

216. OSMORRHIZA NUDA Torr. Bot. Whippl. This does not seem to pass into *O. brevistylis*, with which it has been perhaps unavoidably confounded.

217. GLYCOSMA AMBIGUUM, n. sp. Distinguished from *G. Bolanderi* by greater smoothness, more acute and incised leaflets, longer pedicels, and especially by the shorter fruit (6 or at most 7 lines long), which is decidedly contracted at the commissure, and the ribs towards the base more or less setose, — characters which, with the habit, ally this plant to *Osmorrhiza* much more than to *Myrrhis*. While Bentham and Hooker referred Nuttall's *Glycosma* to *Myrrhis*, they neglected to extend the character so as to include it. It is now clear to me that the genus should be kept distinct both from *Myrrhis* and *Osmorrhiza*, although between the two. The cardinal characteristic of *Osmorrhiza* is the caudate attenuation of the base of the carpels. *Glycosma* has none of this, but the base is abrupt and obtuse. From *Myrrhis* it differs in habit, geographical distribution, absence of involucels, and strikingly in the merely costate (not enlarged and wing-like) juga. As to the breadth of the commissure or contraction of the sides of the fruit, while the original species is much like *Myrrhis* in this respect, the present one is more like *Osmorrhiza*.*

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* GLYCOSMA Nutt. in Torr. & Gray, Fl. 1, p. 639. *Myrrhis & Glycosma* Gray, Proceed. Acad. 7, p. 346.

* Fructus lævis, basi obtusissimus, commissura lata.

G. OCCIDENTALE, Nutt. l. c. Pruinoso-puberula; foliolis oblongo-lanceolatis oblongisve serratis raro incisis; umbellæ fructiferæ radiis suberectis, pedicellis flores sterilia pl. m. superantibus; fructus jugis acutis. *Myrrhis occidentalis* Gray Proc. Acad. l. c.

G. BOLANDERI, subpubescens; foliolis ovatis magis incisis; umbellæ fructiferæ radiis patentibus, pedicellis floribus sterilibus brevioribus; fructus jugis obtusis. *Myrrhis Bolanderi*, Gray, l. c.

* * Fructus breviusculus, basi acutiusculus ad commissuram parum constrictus, costis inferne pl. m. setulosis (nunc denudatis).

G. AMBIGUUM, n. sp. Elatum, glabrum; petiolis costisque subtus pilosiusculis; foliolis ovato-oblongis acutis dentato-incisis sæpiusque 2-3-fidis tenuiter membranaceis; umbellæ fructiferæ radiis patentibus; pedicellis flores sterilia æquantibus; fructu (6-7 lin. longi) lineari-oblongo utrinque acutiusculo. — Foot of Cascade Mountains, Oregon.

I may here append the characters of a new species of *Musenium*, viz.: —

218. ECHINOPANAX HORRIDA Decaisne. (*Panax horridus* Smith.) *Fatsia* § *Tetrapanax* (Koch) Benth. & Hook. f. In fruit.

219. CORNUS NUTTALLII Audubon, Birds of N. Amer. t. 367.

220. CORNUS SUECICA L. (with a little *C. Canadensis*).

221. CORNUS SERICEA var.? OCCIDENTALIS Torr. & Gray, Fl. 1, p. 652. Probably *C. Drummondii* C. A. Meyer, and distinct from any Eastern species.

222. LINNÆA BOREALIS Gronovius.

223. SYMPHORICARPUS RACEMOSUS Michx., var. PAUCIFLORUS Robbins in Gray Man. ed. 5, p. 203.

224. LONICERA CILIOSA Poir.; Torr. & Gray, Fl. 2, p. 5. *Caprifolium ciliosum* Pursh.

225. LONICERA HISPIDULA Dougl.; Torr. & Gray, l. c. *Caprifolium hispidulum* Lindl. Bot. Reg. t. 1761.

226. LONICERA CALIFORNICA Torr. & Gray, l. c.; a variety with glabrous peduncle, ovaries, &c.

227. LONICERA (XYLOSTEON) INVOLUCRATA Banks; Lindl. Bot. Reg. t. 1179.

228. VIBURNUM ELLIPTICUM Hook. Fl. Bor.-Am. 1, p. 280.

229. SAMBUCUS PUBENS Michx., var. In fruit.

230. SAMBUCUS GLAUCA Nutt. in Torr. & Gray, Fl. 2, p. 13.

231. GALIUM APARINE L., var. MINOR, and 232. G. TRIFIDUM L.

233. GALIUM TRIFLORUM Michx., var. Peculiar Western forms.

MUSENIUM GREENEI, n. sp. Acaule; foliis omnibus e caudice apice squamoso-fere simpliciter pinnatis angustis; foliolis 7 - 9 secus rhachin apice tantum marginatam sessilibus ambitu subovatis pinnatifido-5 - 7-lobatis pauci-dentatisque, dentibus lobisque argutis; scapis ultra spithamæis omnino nudis simplicissimus; umbella brevi-radiata; invollucellis e bracteis 3 - 4 subulatis flores "flavos" subsessiles subæquantibus; fructu oblongo obtusissimo truncato lævi calycis dentibus ovato-subulatis submarcescentibus coronato, jugis prominulis angustissimis, vittis interjugalibus 1 - 2 magnis, sub jugis ipsis solitariis parvis. — Colorado, in the lower mountains above Golden City, in shady places, (June 24, with well-formed fruit), Rev. Edward L. Greene. The discoverer of this plant has botanized so earnestly in this region, and has sent me so many beautiful and interesting specimens, that I hasten to pay a well-deserved acknowledgment by affixing his name to the first actually new species which I have received from him. The root and fruits are strong-scented, in the manner of the genus, and the whole plant, as usual, is glabrous. The fruit (about 2 lines long) is peculiar in not being at all contracted at the apex, and its ribs are very thin. The absence of all roughness does not prevent me from referring the plant to *Musenium*, for the true *M. divaricatum* (of which there is an excellent figure by Sprague in the 12th volume of the Pacific Railroad Surveys, Stevens's Expedition) is also quite smooth.

234. Galium boreale L.: the form with a glabrous ovary.

235. Galium Littellii Oakes. Caule lævi subsimplici vix ultrapedali erecto; foliis quaternis ovali-ovatis quandoque ovato-lanceolatis acutiusculis trinervibus ciliatis cæterum sæpius glabris; cymulis plurifloris longius pedunculatis paniculatis; pedicellis omnibus longiusculis, fructiferis divaricatis; corollæ flavidæ glabræ segmentis ovatis obtusis; fructu setis uncinatis crebris setoso. *G. circæzans* var. *montanum* Torr. & Gray, Fl. 2, p. 24. Appears identical with the White Mountain plant, of which few and imperfect specimens were extant, and it would seem truly distinct from *G. circæzans*.

236. Plectritis congesta DC. Prodr. 4, p. 461.

237. Adenocaulon bicolor Hook. Bot. Misc. 1, p. 19, t. 15.

238. Machæranthera canescens Gray, Pl. Wright; a narrow-leaved variety, which includes *Dieteria divaricata* Nutt.

239. Sericocarpus rigidus Lindl., in Hook. Fl. Bor.-Am. 2, p. 14.

240. Sericocarpus Oregonensis Nutt.; Torr. & Gray, Fl. 2, p. 103. Probably only a larger form of the preceding.

241. Aster (Calliastrum) radulinus, n. sp. This plant, which grows also in California (and is probably *A. Radula* Less. in Linnæa, which Nees has referred to his *A. Chilensis* = *A. Durandi* Nutt.), is difficult to distinguish from *A. conspicuus* Lindl., except by the much diminished size of all the parts and the turbinate involucre. Mr. Hall's specimens vary from 5 to 15 inches in height, and the involucre is barely 4 lines long. The rays appear to be white. On the other hand it approaches *A. montanus* of Richardson; but the involucre is turbinate, its scales more imbricate and appressed, the leaves rougher, &c.

242. Aster (Orthomeris) Engelmannii Gray, var. ledophylla. Minor, pedalis; foliis obtusis subtus pube molli derasibili cinereis vix sesquipollicaribus; involucri squamis sensim acuminatis. A remarkable variety, which one of the plants of Lyall's collection serves somewhat to connect with the Rocky Mountain form; but the small size of the leaves (which are very numerous) and the slender-tipped purple involucral scales are peculiar. The specimens are scanty. They were collected high up in Cascade Mountains.

243. Aster Hallii, n. sp. This is apparently a distinct and unpublished species, of the *Dumosi* group, but requires study.

244. Aster Douglasii Lindl.: in various forms. 245. Perhaps a variety of the last, but with lax and more foliaceous involucral scales.

246. ASTER (ORITROPHIUM) SAYI Nutt. herb. Near *A. perigrinus, Sibiricus,* and *salsuginosus.*

247. ASTER SALSUGINOSUS Richardson. An alpine form, scantily collected with the next.

248. ASTER (XYLORHIZA) ALPIGENUS. *Aplopappus? alpigenus* Torr. & Gray, Fl. 2, p. 241. It appears from these copious and beautiful specimens that the rays are violet-colored. The species is nearly allied to *A. Andersonii* Gray; and, with *A. pulchellus* of Eaton (just published in the Botany of King's Exploration), we have now three subscapigerous species of this group.

249. ERIGERON BELLIDIASTRUM Nutt. l. c. Not before reported from Oregon.

250. ERIGERON GLAUCUM Ker. Bot. Reg. t. 10; Torr. & Gray, l. c.

251. ERIGERON SPECIOSUM DC. *Stenactis speciosa* Lindl. Bot. Reg. t. 1577.

252. ERIGERON STRIGOSUM Muhl.; Torr. & Gray, l. c.

253. ERIGERON FILIFOLIUM Nutt.; Torr. & Gray, l. c.

254. ERIGERON DECUMBENS Nutt.; Torr. & Gray, l. c. A slender form.

255. LINOSYRIS VISCIDIFLORA Hook.; Torr. & Gray, Fl. 2, p. 234.

256. APLOPAPPUS LANCEOLATUS Torr. & Gray, l. c. (at least it is *Homopappus multiflorus* Nutt.), var. STRICTA. Resembles *Pyrocoma racemosa* and *paniculata,* Torr. & Gray; but achenia densely silky-canescent and shorter. Stem slender, strict, leafy, bearing 3 to 10 rather distinct spicate heads.

257. APLOPAPPUS HALLII, n. sp. Puberulo-scaber, multicaulis; caulibus (spithamæis et ultra ad apicem usque foliosis; foliis lanceolatis integerrimis apiculato-acuminatis rigidis, costa prominula; capitulis racemosis primum resinosis; involucro obconico vix semipollicari, squamis pluriseriali-imbricatis appressis lanceolatis acutis subglabris; ligulis 7 – 10-disco 10 – 12-floro vix longioribus; acheniis pubescentibus. — Specimens mostly too little developed: a species apparently quite new, connecting *Ericameria* with *Aplopappus* proper. Bluffs of Columbia River at the Dalles.

258. SOLIDAGO VIRGAUREA L. var. HUMILIS, connecting with the var. *alpina.*

259. SOLIDAGO ELONGATA Nutt., var. *β.* Torr. & Gray, Fl. 2, p. 223. Evidently a low plant.

260. SOLIDAGO GIGANTEA Ait. Quite like the Eastern plant.

261. SOLIDAGO OCCIDENTALIS Nutt.; in two forms.

262. CHRYSOPSIS VILLOSA Nutt. Forms passing into *C. hispida.*

263. CHRYSOPSIS (AMMODIA Nutt.) OREGANA Gray, Proc. Acad. 7, p. 543.

264. GRINDELIA HIRSUTULA Hook. & Arn. Bot. Beech. p. 147.

265. GRINDELIA INTEGRIFOLIA DC.; Torr. & Gray, l. c.

266. GRINDELIA HUMILIS Hook. & Arn. l. c.; a variety with more leafy and pubescent stem.

267. GRINDELIA DISCOIDEA Nutt. 268. A more slender form.

269. BACCHARIS PILULARIS DC. Prodr. 5, p. 407. Found for the first time in Oregon.

270. PSILOCARPHUS OREGANUS Nutt. "A common weed." 271. A remarkably large and luxuriant form. Probably all but *P. tenellus* are of one species.

272. MICROPUS CALIFORNICUS Fisch. & Meyer; Torr. & Gray, Fl. 2, p. 265.

273. FRANSENIA BIPINNATIFIDA Nutt. 274. F. HOOKERIANA Nutt.; Torr. & Gray, l. c.

275. WYETHIA ROBUSTA Nutt.; Torr. & Gray, l. c.

276. BALSAMORHIZA DELTOIDEA Nutt.; Torr. & Gray, l. c.

277. RUDBECKIA OCCIDENTALIS Nutt.; Torr. & Gray, l. c.

278. BIDENS CERNUA L., var. ELATA, Torr. & Gray; a low form of it.

279. GAILLARDIA ARISTATA Pursh; Lindl. Bot. Reg. t. 1186.*

280. BAHIA LANATA Nutt.; a slender form.

281. LASTHEMIA GLABERRIMA DC. Prodr. 5, p. 664. Seldom collected, not previously in Oregon.

282. HELENIUM AUTUMNALE L., var. GRANDIFLORUM Torr. & Gray, l. c.

283. BLEPHARIPAPPUS SCABER Hook. Fl. Bor.-Am. 1, p. 316.

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* CHÆNACTIS BRACHYPAPPA, n. sp. Corymboso-ramosa, tenuiter cinereo-pubescens, glabrescens; foliis longius petiolatis bipinnatipartitis, segmentis linearibus obtusis; pedunculis brevibus; involucri squamis linearibus obtusis disco subdimidio brevioribus; corollis albis, marginalibus ampliatis; antheris semi-exsertis; pappo simplici e paleis 4-5 quadratis subcuneatisve truncatis consimilibus corollæ tubo dimidio brevioribus (nunc fl. disci uno quandoque satis elatiore). In habit, size, &c., resembles *C. stevioides;* but leaves more compound and their segments divaricate, corolla apparently pure white and only 2½ lines long, and pappus remarkably short and truncate. — Discovered by Miss Searls in the Pahranagat Mountains, Nevada.

284. MADIA (MADARIA DC.) ELEGANS Don; chiefly the form which is *M. racemosa* Nutt., and a depauperate slender state of it.

285. MADIA (AMIDA Nutt.) GLOMERATA Hook. l. c. Includes *Amida gracilis* and *A. hirsuta* Nutt.

286. MADIA (ANISOCARPUS) NUTTALLII, *Anisocarpus madioides* Nutt. l. c.*

287. MADIA RACEMOSA Torr. & Gray, Fl. 2, p. 405. *Madorella racemosa* Nutt.

288. MADIA (HARPÆCARPUS) FILIPES. *Harpæcarpus madarioides* Nutt. This and the related *M. exigua* (*Sclerocarpus exiguus* Smith) form a marked section of the genus as now extended.

289. LAGOPHYLLA RAMOSISSIMA Nutt.; Torr. & Gray, Fl. 2, p. 402.

290. ACHILLEA MILLEFOLIUM L., a dwarf variety of high mountains. *A. tomentosa* Pursh.

0. COTULA AUSTRALIS Hook. f., Fl. N. Zeal. 1, p. 128. *Strongylosperma* DC. A few specimens, probably adventive; but the species is spreading widely over Pacific coasts.

291. ARTEMISIA DRACUNCULOIDES Pursh; Torr. & Gray, Fl. 2, p. 416.

292. ARTEMISIA CANADENSIS Michx.; Torr. & Gray, l. c.

293. ARTEMISIA LUDOVICIANA Nutt., var. LATIFOLIA Torr. & Gray. 294. Var. DOUGLASIANA Eaton in Watson, Bot. King (*A. Douglasiana* Besser), and another form near it.

295. ARTEMISIA DISCOLOR Dougl. in Hook, l. c. Only the tops of the plant, and of doubtful determination.

296. GNAPHALIUM (GAMOCHÆTA) PURPUREUM L.

297. GNAPHALIUM PALUSTRE Nutt. l. c. *G. gossypinum* Nutt. is the same plant.

298. GNAPHALIUM LUTEO-ALBUM L. *G. Sprengelii* Hook. & Arn. Bot. Beech.

299. GNAPHALIUM MICROCEPHALUM Nutt. l. c. A slender form.

300. GNAPHALIUM LEUCOCEPHALUM Gray, Pl. Wright, 2, p. 99. This and the last are new to Oregon.

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* MADIA BOLANDERI (as *Anisocarpus Bolanderi*, Gray, must be called in the re-arrangement of the Madioid genera) is surpassed in size of heads and rays by an allied Californian species having fertile disk-flowers, *M. radiata* Kellogg in Proc. Calif. Acad. 4, p. 190, Jan. 1872.

301. ANTENNARIA MARGARITACEA R. Br.; an unusually small form of this species.

302. ANTENNARIA DIOICA Gærtn.; and 303. A. ALPINA Gærtn.: female plants of both.

304. SENECIO SUBNUDUS DC.; Torr. & Gray, Fl. 2, p. 444.

305. SENECIO FASTIGIATUS Nutt.; Torr. & Gray, l. c. A pretty rare species.

306. SENECIO EXALTATUS Nutt. Probably a mere variety of *S. lugens*, to which it has been referred.

307. SENECIO TRIANGULARIS Hook. Fl. Bor.-Am. t. 115; a variety with smaller leaves and heads than the original, and with many of the upper leaves tapering to the base: wherefore it was thought to be the little-known *S. serra* Hook, l. c.; but that, according to Professor Oliver, has still smaller heads, and leaves gradually narrowed to the base.

308. ARNICA LATIFOLIA Bongard. *A. Menziesii* Hook. Fl. Bor.-Am. 1, t. 111. In various, mostly small, forms.

309. ARNICA AMPLEXICAULIS Nutt.; Torr. & Gray, l. c. Some of the specimens tall and remarkably leafy.

310. CIRSIUM EDULE Nutt. 311. C. REMOTIFOLIUM DC.; Torr. & Gray, l. c.; not well named.

312. CIRSIUM UNDULATUM Nutt.: Torr. & Gray, l. c.

313. CALAIS LACINIATA Gray, in Bot. Whippl. p. 57. *Scorzonella* Nutt.; Torr. & Gray, Fl. 2, p. 470.

314. APARGIDIUM BOREALE Torr. & Gray, Fl. 2, p. 474.

315. MACRORHYNCHUS HETEROPHYLLUS Nutt.; Torr. & Gray, l. c. Small and pubescent form, with outer achenia inclined to have undulated wings, as in Nuttall's description. 316. A small, less pubescent form. 317. Larger form; achenia merely ribbed.

318. MACRORHYNCHUS LESSINGII Hook. & Arn. A small form: root obviously not annual.

319. MACRORHYNCUS LACINIATUS Torr. & Gray, l. c.; a slender form, with finely cut leaves. 320. A larger form, answering to var. LONGIFOLIUS Torr. & Gray, l. c.

321. MACRORHYNCUS ELATUS Torr. & Gray, l. c.: form with broad merely pinnatifid-incised leaves.

322. STEPHANOMERIA PANICULATA Nutt.; Torr. & Gray, l. c.

323. HIERACIUM SCOULERI Hook. Fl. Bor.-Am. 1, p. 298.

324. HIERACIUM TRISTE Willd. *H. gracile* Hook. Fl. Bor.-Am. l. c.

325. HIERACIUM ALBIFLORUM Hook. Fl. Bor.-Am. 2, p. 297.

326. HIERACIUM UMBELLATUM L.; Hook. l. c.

327. MALACOTHRIX CREPOIDES Gray, in Pacif. R. R. Expl. 12, p. 49.

328. MULGEDIUM PULCHELLUM Nutt.; Torr. & Gray, Fl. 2, p. 497.

329. MULGEDIUM LEUCOPHÆUM DC.; Torr. & Gray, l. c.

330. DOWNINGIA ELEGANS Torr. (*Clintonia elegans* Lindl.) Var. CORYMBOSA. *Clintonia corymbosa* DC. Prodr. 7, p. 347.

331. HETEROCODON RARIFLORUM Nutt. in Trans. Amer. Phil. Soc. 8, p. 255.

332. SPECULARIA PERFOLIATA A. DC. *Dysmicodon* Nutt. l. c.

333. GITHOPSIS SPECULARIOIDES Nutt. l. c., mixed with 334. Var. HIRSUTA, Nutt.

335. CAMPANULA SCOULERI Hook. Fl. Bor.-Am. 2, p. 28, t. 125.

336. VACCINIUM OVATUM Pursh; Lindl. Bot. Reg. t. 1354. In fruit.

337. VACCINIUM MYRTILLOIDES Hook. l. c. (var. MACROPHYLLUM), not of Michx.

338. VACCINIUM PARVIFOLIUM Smith; Hook. l. c. t. 128. In fruit.

339. VACCINIUM ULIGINOSUM L. In fruit.

340. VACCINIUM CÆSPITOSUM Michx., var. ANGUSTIFOLIUM. *V. cuneifolium* Nutt. herb. A fine stock of specimens, in fruit, of a *Vaccinium* apparently common in the region, which at first sight seems distinct enough from *V. cæspitosum,* by its taller and bushy stems and narrower (in these specimens oblanceolate) leaves; but the two are connected by intermediate forms. I should take it to be *V. salicinum* of Chamisso, except that he describes the leaves of the Unalaschka plant as quite entire.

341. ARBUTUS MENZIESII Pursh, Hook. l. c. In fruit.

342. ARCTOSTAPHYLOS TOMENTOSA Dougl.; Hook. l. c. p. 130. In fruit.

343. ARCTOSTAPHYLOS PUNGENS HBK.; Hook. Bot. Mag. t. 3027.

344. ARCTOSTAPHYLOS UVA-URSI Spreng., var. The large Western form, with mature fruit.

345. GAULTHERIA SHALLON Pursh, Fl. 1, p. 284, t. 12.

346. GAULTHERIA MYRSINITES Hook. l. c. t. 129. Mostly a large form, in fruit.

347. MENZIESIA FERRUGINEA Smith, Ic. t. 56; a variety of *M. globularis* Salisb.

348. LEDUM GLANDULOSUM Nutt. in Trans. Am. Phil. Soc. l. c. In fruit.

349. RHODODENDRON CALIFORNICUM Hook. Bot. Mag. t. 4863. Flower and fruit.

350. RHODODENDRON ALBIFLORUM Hook. Fl. Bor.-Am. 2, p. 43, t. 133.

351. PYROLA MINOR L.; Hook. Fl. Bor.-Am. 2, p. 45.

352. PYROLA BRACTEATA Hook. l. c. Specimens so well marked that one would think the species a very good one.

353. PYROLA PICTA Smith; Hook. l. c. In fruit.

354. PYROLA CHLORANTHA Swartz? With ripe fruit only; a remarkable form, if of this species, with small oval leaves.

355. CHIMAPHILA UMBELLATA Pursh; Hook, l. c.

356. CHIMAPHILA MENZIESII Hook. l. c. t. 138.

357. PLEURICOSPORA FIMBRIOLATA Gray, Proc. Am. Acad. 7, p. 368. A few specimens of this most interesting plant, gathered in deep woods, June 30, just coming into blossom. Plant said to have the taste of *Polygala Senega.* The short spike is at first nodding.

0. ALLOTROPA VIRGATA Torr. & Gray, l. c. A single specimen of this rare plant only collected.

358. DODECATHEON MEADIA L. var.; one of the small Western forms.

359. TRIENTALIS EUROPÆA L., var. LATIFOLIA, *T. latifolia* Hook. l. c. 360. Var. ARCTICA, *T. arctica* Fischer.

361. CENTUNCULUS MINIMUS L. var. *C. lanceolatus* Michx. Not seen before west of the Rocky Mountains.

362. PLANTAGO PATAGONICA, Jacq. var. GNAPHALIOIDES Gray, Man. ed. 5.

363. UTRICULARIA VULGARIS L.

364. PHELIPÆA PINETORUM Gray, Proc. Am. Acad. 7, p. 371. *Orobanche pinetorum* Geyer.

365. COLLINSIA GRANDIFLORA Lindl. Bot. Reg. t. 1107; Hook. l. c. 366. Var. NANA: spithamæa, ramosior, floribunda. (Of *C. parviflora* Dougl. only two or three specimens were collected.)

367. TONELLA COLLINSIOIDES Nutt. in DC. Prodr. 10, p. 593 (sub *Collinsia tenella*); Gray, Proc. Am. Acad. 7, p. 378.

368. PENTSTEMON MENZIESII Hook., var. LEWISII; very dwarf form in flower. 369. Larger form, in fruit.

370. PENTSTEMON TRIPHYLLUS Dougl.; Lindl. Bot. Reg. t. 1245.

371. Pentstemon Richardsonii Dougl. Lindl. Bot. Reg. t. 1121.

372. Pentstemon diffusus Dougl.; Lindl. Bot. Reg. t. 1132.*

373. Scrophularia nodosa L.

374. Mimulus luteus L.; the large form. 375. Small-flowered form of the same.

376. Mimulus moschatus Dougl.; Lindl. Bot. Reg. t. 1118.

377. Mimulus floribundus Dougl.; Lindl. Bot. Reg. t. 1125.

378. Mimulus alsinoides Dougl.; Benth. in DC. Prodr. 10, p. 373. A well-marked species, which I have not before received, mostly more luxuriant specimens than Douglas's plant appears to be, and none of the peduncles "much longer than the leaves," most of them barely equalling the leaf, but then the petiole is very slender.

379. Gratiola ebracteata Benth. in DC. Prodr. 10, p. 595.

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* The three following species were in Miss Searls's collection made in the Pahranagat Mountains, S. E. Nevada: —

Pentstemon Palmeri Gray, Proc. Am. Acad. 7, p. 379. From the dried specimens and from the report of Mr. Watson this should be "an exceedingly handsome species," but in cultivation here thus far it is not quite so showy as might have been expected: the flowers are elegant, but almost white.

Penstemon cæspitosus Nutt., var.? incanus: foliis brevioribus sursum sæpius latioribus (obovato-spathulatis) cum sepalis ovato-oblongis pube creberrima canescentibus; pedunculis brevibus unifloris erectis. Very likely a distinct species.

Pentstemon Eatoni, n. sp. Quoad folia et inflorescentia virgata *P. barbato* simillimus, sed pedunculis pedicillisque brevioribus *P. centranthifolii;* corolla (coccinea raro alba) sensim ampliata imberbi labiis brevibus erectis parum inæqualibus *P. imberbis* modo, sed antheræ loculis divergentibus, filamento sterili hinc barbulato. — *P. centranthifolius* S. Watson, Bot. King, p. 219, non Benth. — Of this species I received a flower several years ago, from some now forgotten source, and referred it to *P. imberbis:* consequently I did the same upon receiving a specimen collected in Arizona by Dr. E. Palmer. Mr. Watson, who, in company with Professor Eaton, found it abundantly in Provo Cañon, Wahsatch Mountains, referred it to the Californian *P. centranthifolius.* But, besides other distinctions, it has the characteristic anthers of the *Elmigera* group, to which it adds a third species. The cells of the anther diverge widely, and are much larger than those of *P. imberbis:* their dehiscence stops well short of the apex. Upon this the character of the section rests; for in this species, as in the Mexican one just mentioned, the lower lip of the corolla is not at all decurved, apparently not even patent. Specimens have been distributed under the name of *P. miniatus,* Lindley's plant of that name, in the last volume of the Botanical Register, having been overlooked. As it is likely to be brought into the gardens, and perhaps to be as great a favorite as its relatives, *P. barbatus* and the variety *Torreyi,* I take pleasure in having it bear the name of Professor D. C. Eaton, one of its discoverers.

380. Ilysanthes gratioloides Benth. in DC. l. c. Not before found west of the Rocky Mountains.

381. Veronica Americana Schweinitz, Benth. in DC. l. c. 382. Veronica scutellata L.

383. Veronica alpina L. Sparingly collected.

384. Veronica serpyllifolia L. Apparently indigenous.

385. Synthyris reniformis Benth. l. c. *Wulfenia reniformis* Hook. Fl. Bor.-Am. 2, t. 171. Fine specimens, both in flower and fruit, of this rare plant.

386. Orthocarpus pusillus Benth. in DC. Prodr. p. 535. Collected in Oregon also by Nuttall and in Wilkes's Expedition.

387. Orthocarpus bracteosus Benth. l. c. Corolla bright purple.

388. Orthocarpus hispidus Benth. l. c. Large form, and slender specimens, the latter, I fear, not distinct from *O. attenuatus* Gray.

389. Castilleia parviflora Bongard, the *C. hispida* Benth.

390. Castilleia pallida Kunth, var. miniata Gray in Sill. Jour. Two forms.

391. Pedicularis racemosa Dougl. in Hook. Fl. Bor.-Am. 2, p. 108.

392. Pedicularis Grœnlandica Retz., var. surrecta. *P. surrecta* Benth.

393. Verbena bracteosa Michx.

394. Mentha Canadensis L.: both forms.

395. Lycopus Virginicus L., with some specimens of the var. macrophyllus (*L. macrophyllus* Benth.), or nearly it, as well as of the depauperate form, *L. uniflorus* Michx.

396. Lycopus sinuatus Ell. *L. Europæus* var. *sinuatus* Gray, Man., but a good species.

397. Micromeria Douglasii Benth.: Hook. l. c.

398. Scutellaria antirrhinoides Benth. l. c. The only genuine specimens I have seen. Distinguished from the broader-leaved forms of *S. angustifolia* by its smaller and especially shorter corolla, its tube enlarging gradually immediately above the calyx. Bentham indeed says that the flowers are just those of that species; but the difference here indicated probably holds good. It is still more marked in a var. Californica, a more erect, rigid, and commonly larger form, with corolla (seemingly yellowish instead of blue) decidedly ventricose from a broader tube. This has been collected by Fremont,

Bigelow, Bolander, Rattan, Bridges, and Torrey; and Hartweg's no. 1918, referred by Bentham to *S. angustifolia*, is a narrow-leaved form of it.

399. SCUTELLARIA LATERIFLORA L.

400. STACHYS CILIATA Dougl.; Hook. Fl. Bor.-Am. 2, p. 116.

401. STACHYS PALUSTRIS L.; Hook. l. c.

402. TRICHOSTEMA OBLONGUM Benth., and 403. T. LANCEOLATUM Benth. l. c.

404. AMSINCKIA LYCOPSOIDES Lehm.; DC. Prodr. 10, p. 117.

405. MERTENSIA PANICULATA Don; Gray in Sill. Jour. 34, p. 340. Chiefly in fruit.

406. ERITRICHIUM PLEBEIUM A. DC. Prodr. 10, p. 133.

407. ERITRICHIUM CALIFORNICUM A. DC. l. c. Doubtless passes into the next, which has the oldest name.

408. ERITRICHIUM CHORISIANUM A. DC. l. c. Has more distinct pedicels and larger corolla than the last.

409. ERITRICHIUM FULVUM A. DC. *Myosotis* (*Dasymorpha*) *tenella* Nutt.; Hook. Pl. Geyer.

410. ERITRICHIUM MURICULATUM A. DC. l. c. *Myosotis muricata* Hook. & Arn.

411. PLAGIOBOTHRYS CANESCENS Benth. Pl. Hartw. p. 326.

412. NEMOPHILA PARVIFLORA Benth.; Hook. Fl. Bor.-Am. 2, p. 79. — A few specimens were gathered of *Hydrophyllum macrophyllum* var. *occidentale* S. Watson in Bot. King, p. 248, along with a form that seemingly passes into *H. Virginicum.*

413. ROMANZOVIA SITCHENSIS Bongard, Veg. Sitcha, t. 4.

414. PHLOX DOUGLASII Hook., nearly var. DIFFUSA Gray Proc. Am. Acad. 7, p. 254, i. e. *P. diffusa* Benth. Pl. Hartw. p. 325, which synonyme was inadvertently omitted in the monograph above referred to.

415. COLLOMIA GRANDIFLORA Dougl. in Lindl. Bot. Reg. t. 1174.

416. COLLOMIA LINEARIS Nutt.; Lindl. Bot. Reg. t. 1166. In fruit.

417. COLLOMIA GRACILIS Dougl. *Gilia gracilis* Hook. Bot. Mag. t. 2924.

418. COLLOMIA HETEROPHYLLA Hook. Bot. Mag. t. 2895, Gray, l. c.

419. GILIA (LEPTOSIPHON) TENELLA Benth. Pl. Hartw. l. c.; Gray, l. c.

420. GILIA (NAVARRETIA) SQUARROSA Hook. & Arn. Bot. Beechey, p. 151.

421. GILIA (NAVARRETIA) INTERTEXTA Steud.; Gray, l. c.

422. GILIA CAPITATA Dougl.; Hook. Bot. Mag. t. 2698.

423. NICOTIANA MULTIVALVIS Lindl. Bot. Reg. t. 1057.

424. ERYTHRÆA NUTTALLII S. Watson, Bot. King, Expl. p. 277, t. 29. I presume that this is also *Cicendia exaltata* Griseb. in Hook. Fl. Bor.-Am. 2, p. 69, t. 157, and that the characters "stylo nullo" and "stigmate vix distinguendo" were based in some way upon the imperfection of the specimen, — the style perhaps broken off. The anthers are linear-oblong, and as much twisted when dry as in several other species of *Erythræa*. The stigma is actually that of Grisebach's section *Euerythræa*, in these specimens much more divided than in Watson's figure. 425. Var. TENELLA. A smaller form, one to three inches high.

426. GENTIANA AFFINIS Griseb. in Hook. l. c. p. 56.

427. APOCYNUM ANDROSÆMIFOLIUM L.: the Western form.

428. ASCLEPIAS SPECIOSA Torr. Ann. Lyc. N. Y. *A. Douglasii* Hook. Fl. Bor.-Am. 2, p. 33, t. 142.

429. ASCLEPIAS FASCICULARIS Decaisne in DC. Prodr. 8, p. 569.

430. FRAXINUS OREGANA Nutt. Sylv. 3, p. 59, t. 99.

431. ASARUM CAUDATUM Lindl. Bot. Reg. sub t. 1399. *A. Hookeri* Fielding & Gardn. Sert. t. 32.

432. ATRIPLEX LITTORALIS L.: narrow-leaved variety, in few specimens.

433. ATRIPLEX (OBIONE) TRUNCATA. *Obione truncata* Torr. in Watson, Bot. King, Expl. p. 291. Two or three specimens of the typical plant: those distributed are — Var. STRICTA: foliis hastato-lanceolatis nunquam cordatis, inferioribus basi cuneatis; inflorescentia virgata minus foliata. *A. patula* var. foliis magis argento-furfuraceis Hook. Fl. Bor.-Am. 2, p. 128, ex char. The fruit (indurated theca), as in the Nevadan specimens, is 3 – 4-toothed at the truncate summit, the teeth variable, middle one rarely a little produced, and some tubercles occasionally developed on the disk.

434. AMARANTUS RETROFLEXUS L. var. *A. occidentalis* Nutt. herb.; a depauperate and smooth form.

435. ERIOGONUM COMPOSITUM Dougl. in Benth. Eriog. t. 17; Gray, Rev. Eriog. in Proc. Am. Acad. 8, p. 159. In fruit.

436. ERIOGONUM UMBELLATUM Torr.; Gray, l. c.

437. ERIOGONUM NUDUM Dougl. in Benth. l. c.; Gray, l. c. p. 167. The type of the species.

438. ERIOGONUM ELATUM Dougl. in Benth. Eriog. l. c.; Gray, Rev. Eriog. l. c. p. 168.

439. ERIOGONUM DICHOTOMUM Dougl. l. c.; Gray, l. c. p. 175.

440. ERIOGONUM VIMINEUM Dougl. l. c.: Gray, l. c. p. 177.

441. RUMEX SALICIFOLIUS Wimm.; Hook. l. c.*

442. RUMEX ACETOSA L.; Hook. Fl. Bor.-Am. 2, p. 129; sparingly collected.

443. POLYGONUM NODOSUM Pers.; Meisn. in DC. l. c.

444. POLYGONUM AMPHIBIUM L., var. TERRESTRE Willd.

445. POLYGONUM BISTORTA L.; Hook. Fl. Bor.-Am. l. c.

446. POLYGONUM DAVISIÆ Brewer, n. sp. (Fl. Calif. ined.) A remarkable species, with a low, branching, commonly zigzag, very

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* RUMEX BRITANNICA L. I think I have been able to determine the *Rumex* to which Linnæus gave this unfortunate name. The source of the name is to be found by following up his reference to "*Mat. Med.* 17," i. e. Materia Medica, paragraph 177 (not 17), where, under reference to Fl. Suec. 292, "Europæ nostræ paludes," is added "*Pharm. Herbæ Britannicæ radix.*" The North American plant to which he applied this name was one in his herbarium sent to him by Gronovius from Clayton's herbarium of the Flora Virginica. The fruit of it is not well developed, but the slender pedicels and the foliage show that it is the *R. orbiculatus* of the later edition of my Manual. But the specimen retained in Clayton's herbarium to represent the species, and the only Rumex in that herbarium, is quite different, has some long-awned teeth to the valves, and is, as I believe, *R. obtusifolius.* The difference in the plants accounts for the remark of Linnæus: "Plantam Gron. in Fl. Virginica habui a Cl. Authore, quæ non rubra erat caule aut costis." For Clayton's character, as printed by Gronovius in the first edition of Flora Virginica, was: — "Lapathum foliis longis latis vix acuminatis, *costis caulibusque rubentibus,* radice intus crocea." That probably relates to the plant retained by Gronovius. And the specimen sent was perhaps Clayton's other species, viz., — "Lapathum aquaticum foliis longis," &c., which Linnæus referred to *R. verticillatus.* As to the *R. Britannica* of Michaux, Pursh, and even Meisner, it is uncertain whether they had in view the plant called by me in the Manual by that name, but named by Professor Wood *R. altissimus,* or that which Wood and probably Pursh took for *R. Britannica,* and I named *R. orbiculatus.* The latter proves to be the Linnæan species, and must claim the name, unless that be regarded as a *nomen falsum,* in which case we must take up that of *R. Claytoni* Campdera, who may be presumed to have meant the Linnæan plant, although there is nothing in his character to certify it. A considerable difficulty in identifying the Linnæan species by the description grew out of the comparison in the species Plantarum with *R. verticillatus,* with which when in fruit it has little in common, except the slender pedicels. It should also be noticed that there is a transposition in the naming of the specimens in the Linnæan Herbarium, which, however, has been corrected by Smith.

leafy stem, in these specimens more pubescent than in those from California, and the flowers more numerous and spicate. It was thought to be of the *Avicularia* section, but the present specimens refer it rather to the section *Aconogonon*, along with *P. alpinum* or *polymorphum.* Professor Brewer describes the root as annual, which I should hardly suppose; the leaves are mostly sessile, ovate, 1 to 2 or even 3 inches long; ochreæ chestnut-colored, obliquely truncate. Perianth barely a line long, tapering to a very acute or almost stipitate base: achenium smooth, with broad faces, twice the length of the perianth. In California it belongs to the Sierra Nevada: it was collected by Professor Brewer himself, Professor Torrey, and by Miss N. J. Davis, to whom it is appropriately dedicated.[*]

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[*] Professor Brewer arranges the Californian *Polygona* of the *Avicularia* section into: —

1. Annuals, with stems not at all striate: *P coarctatum* Dougl. and *P. Californicum* Meisner.

2. Annuals, with stems striate, at least towards the base: *P. tenuis* Michx., *P. ramosissimum* Michx., and *P. aviculare* L.

3. Perennials, with stems woody at base, and branches slender; bark chestnut-brown: *P. Paronychia* Cham. & Schlecht., and the two following new species.

" P. SHASTENSE, Brewer. Woody; branches prostrate; leaves lanceolate, plane or at least not revolute, either blunt or acute: sheaths inconspicuous, scarious and much torn: flowers in a very loose leafy spike, 1 – 3 in an axil, 2 – 3 lines long, on pedicels nearly or quite as long: styles ¼ the length of the ovary or less. The base of the crabbed stem is of very hard dark wood, sometimes half an inch in diameter. Branches prostrate, crooked, rough with old leaf-scars, 4 – 8 inches long and a line or less in diameter, leafless except for the inch or two near the end. Joints usually but 1 or 2 lines long. The silvery sheaths are very inconspicuous. Flowers conspicuous, white, bright rose, or red. Perianth tapering to a very acute or almost stipitate base which is sometimes corrugated; the segments broadly obovate or orbicular, sometimes emarginate, veined, usually deepest colored along the middle. The 2 or 3 outer segments are channelled, making the flower triangular. Sierra Nevada in exposed places, on dry ashy soil, Mt. Shasta to Carson Pass, *Torrey, Brewer.*

" P. BOLANDERI, Brewer. Woody; branches erect and slender, with numerous lateral flowering spikes above: leaves minute, cuspidate-mucronate; sheaths nerveless, scarious and much torn: flowers commonly solitary in the axils, 1½ lines long, on pedicels ¼ as long, rather acute at the base, the segments elliptical and 1-nerved; styles ¼ as long as ovary or less. — The gnarled and crabbed base is often an inch or more in diameter and of very hard wood, bearing broomlike tufts of very slender woody branches. These are very numerous, erect, nearly straight, 10 – 18 inches high, wiry or filiform, half a line in diameter, the joints 6 – 10 lines long, almost naked below, and bearing at nearly every upper node a

447. POLYGONUM AVICULARE L. A native form of the species?

448. POLYGONUM RAMOSISSIMUM Michx.; a tall, yellowish form.

449. POLYGONUM TENUE Michx., with a larger-flowered variety peculiar to the western side of the continent, *P. racemosum* Nutt. herb. 450. A low form, with more crowded and showy blossoms. 451. A somewhat similar form. 452. An undetermined, probably undescribed species of this section.

453. POLYGONUM COARCTATUM Dougl. in Hook. Fl. Bor.-Am. 2, p. 133.

454. POLYGONUM CONVOLVULUS L. Apparently native.

455. COMANDRA UMBELLATA Nutt. Quite like the Eastern plant.

456. PHORADENDRON FLAVESCENS Nutt., var. VILLOSUM Engelm. *P. villosum* Nutt. and *P. tomentosum* Engelm.

457. ARCEUTHOBIUM ABIETINUM Engelm. n. sp.; male specimens. 458. Female specimens. On *Abies grandis*, Willamette Valley.

459. CALLITRICHE MARGINATA Torr. Bot. Whippl. p. 79.

460. CALLITRICHE VERNA L.

461. CALLITRICHE BOLANDERI Hegelm., apparently. Stigmas elongated.

461^{a}. CALLITRICHE AUTUMNALIS L. With young fruit.

462. EREMOCARPUS SETIGERUS Benth. Bot. Sulph. p. 53, t. 26. *Croton setigerus* Hook. Fl. Bor.-Am.

463. EUPHORBIA GLYPTOSPERMA Engelm. in Bot. Mex. Bound. p. 187.

464. EUPHORBIA SERPYLLIFOLIA Pers.: a narrow-leaved form, with distinctly scrobiculate seeds. 465. A broader-leaved form, with seeds obscurely scrobiculate.

466. CELTIS RETICULATA Torr.; Nutt. Syl. 1, t. 39. In fruit.

467. CASTANOPSIS CHRYSOPHYLLA A. DC. *Castanea chyrsophylla* Dougl. in Hook. Fl. Bor.-Am. 2, p. 159.

467^{a}. CORYLUS ROSTRATA Ait., var. CALIFORNICA A. DC. Beak of fruit much shorter than in the Eastern species.

468. MYRICA CALIFORNICA Cham. & Schlecht.; Hook. Fl. Bor.-Am. 2, p. 160.

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flowering spikelet. Leaves 2–3 lines long, half a line wide, thickish, the point bayonet-like, those of the flowering spikelets nearly concealed by the sheaths. The spikelets are 6–10 lines long and very numerous, silvery or tawny, with the conspicuous sheaths contrasting beautifully with the chestnut-colored bark of the branches. —Very dry rocky hills east of Napa Valley, California, *Brewer, Bolander.*"

469. Betula pumila L.; Regel in DC. Prodr. 16, p. 173.

470. Alnus rubra Bongard; Regel. l. c. p. 186.

471. Salix lanceolata Anders. Sal. Monogr. & in DC. Prodr. 16, p. 206, ex char. With mature fruit.

472. Salix longifolia Muhl.; Anders. l. c. var.

473. Salix Sitchensis Bongard; Anders. l. c. With ripe catkins only an inch or two long.

(Salix chlorophylla var. pellita Anders. in DC. l. c. p. 243. One or two specimens collected, in fruit.)

474. Salix sessilifolia Nutt., var. villosa Anders. in DC. l. c. p. 215?

475. Pinus contorta Dougl.; the narrow-leaved, true Douglasian species. 475^{a}. A mountain form with broader leaves.

476. Pinus ponderosa Dougl., the original Douglasian form, according to Dr. Engelmann, with ripe cones.

477. Pinus monticola Dougl.: foliage and old cones.

478. Pinus albicaulis Engelm.; with male flowers only. Higher elevations of Mount Hood.

479. Abies grandis Dougl., forma lasiocarpa Hook. (A. *bifolia* Murray,) from the upper part of Mount Hood.

480. Abies (Tsuga) pattoniana Jeffrey, Gordon. *A. Williamsonii* Newberry.

481. Abies (Tsuga) Douglasii Lindl. In fruit.

482. Abies (Tsuga) Mertensiana Lindl. In fruit.

483. Thuya gigantea Nutt. Sylv. 3, t. 111; Hook. Fl. Bor.-Am. 1, p. 165.

484. Juniperus commuris L. var., alpina Parl. in DC. Prodr. 16, p. 480.

485. Taxus brevifolia Nutt. Sylv. 3, p. 86, t. 108. The *Coniferæ* were mostly determined by Dr. Engelmann.

486. Potamogeton natans L.; Hook. Fl. Bor.-Am. 2, p. 171.

487. Potamogeton Claytonii Tuckerman; Robbins in Gray Man. p. 485.

488. Potamogeton rufescens Schrader; Hook. Fl. Bor.-Am. p. 172. 488^{a}. A large form?

489. Potamogeton perfoliatus L.; Hook. l. c 490. Var. lanceolatus Robbins in Gray, Man. l. c.

491. Potamogeton compressus L. *P. zosteræfolius* Schumacher, Hook. l. c.

492. POTAMOGETON PUSILLUS L. Dry fruit slightly keeled. 493. Var.? with fruit rounded and even on the back, and with a subdorsal nerve on each side.

494. POTAMOGETON PECTINATUS L.; Hook. l. c. In a pond at the Dalles of the Columbia.

495. POTAMOGETON ROBBINSII Oakes; Robbins in Gray, Man. p. 490. With flowers and some well-formed fruit! The latter has hardly been collected before.

496, 497. LEMNA MINOR L. 498. L. POLYRRHIZA L.

499. LYSICHITON KAMSTCHATENSE Schott. *Arctiodracon* Gray. *Symplocarpus* Bongard. Three or four scapes and leaves of this rare plant only collected.

500. SPARGANIUM SIMPLEX Hudson; Engelm. in Gray, Man.

501. ALISMA PLANTAGO L., var. AMERICANUM Gray, Man. l. c.

502. SAGITTARIA VARIABILIS Engelm. in Gray, Man. l. c.: large form.

503. ANACHARIS CANADENSIS Planchon; narrow-leaved form: sterile.

504. HABENARIA HYPERBOREA R. Br.; a slender form.

505. HABENARIA DILATATA Gray in Sill. Jour. p. 311, &c. With bright white flowers.

506. HABENARIA ELEGANS. *Platanthera elegans* Lindl. Gen. & Spec. Orch. p. 285.

507. HABENARIA FŒTIDA S. Watson, Bot. King Expl. p. 31. *Platanthera fœtida* Geyer in Hook. Kew Jour. Bot. 7, p. 376.

508. GOODYERA MENZIESII Lindl. l. c. *Spiranthes decipiens* Hook. Fl. Bor.-Am. 2, t. 204.

509. SPIRANTHES ROMANZOVIANA Chamisso; Gray, Man. p. 504.

510. LISTERA CORDATA R. Br. A few specimens of the larger western form.

511. CORALLORHIZA MULTIFLORA Nutt.; Hook. l. c.

512. CORALLORHIZA MERTENSIANA Bongard; Hook. l. c. A well-marked species, scantily collected, as well as the next.

512^a. CORALLORHIZA STRIATA Lindl. Gen. & Sp. Orch. p. 534. *C. Macræi* Gray, Man., is clearly the same.

513. CYPRIPEDIUM PASSERINUM Richardson; Hook. l. c. p. 205.

514. IRIS TENAX Dougl. in Bot. Reg. t. 1218.

515. SISYRINCHIUM TINCTORIUM HBK.; Klatt in Linnæa, 23, p. 82. *S. lineatum* Torr. A yellow-flowered species.

516. TRILLIUM OVATUM Pursh, Fl. 1, p. 245. In fruit.

517. TRILLIUM SESSILE L. var. CHLOROPETALUM Torr. Bot. Whippl. p. 95. Mostly in fruit.

518. SCOLIOPUS BIGELOVII Torr. Bot. Whippl. p. 89, t. 22. Foot-hills of the Cascades, along mossy banks of streams. Copious specimens of this most rare plant were collected, but past flowering, i. e. the perianth and hypogynous stamens fallen: one or two specimens fortunately have ripe fruit. The thin-walled pericarp appears to open irregularly, not by any of the six sutural lines, but as it were between them, or near the three stronger and seminiferous sutures; and it would seem that the walls at length vanish, leaving the placentæ like a replum, sometimes united at apex by the persistent style, which is much more distinct and slender than in Dr. Torrey's figure, more so indeed than in Dr. Bigelow's specimens. The leaves also in the present specimens are smaller and narrower at base; but there is probably no specific difference. The characters of the fruit and seeds are appended.*

519. CLINTONIA UNIFLORA. *Smilacina uniflora* Hook. Fl. Bor.-Am. 2, p. 175, t. 190.

520. PROSARTES HOOKERI Torr. Bot. Whippl. p. 88. In fruit; but apparently of this species. Some may be *P. Smithii* (*Uvularia* Hook. l. c. t. 189), of which two flowering branches were collected.

521. STREPTOPUS ROSEUS Michx. Fl. 1, p. 201, t. 18.

522. S. AMPLEXIFOLIUS DC. Both species in fruit.

523. SMILACINA BIFOLIA Ker; the Pacific coast form, more like the European than is our Eastern one.

524. LILIUM CANADENSE L.? A Western form, apparently between this and *L. superbum*.

525. CALOCHORTUS ELEGANS Pursh; Hook. l. c. p. 183; both the vars. MINOR and MAJOR.

526. BRODIÆA GRANDIFLORA Smith; Hook. Bot. Mag. t. 2877.

527. BRODIÆA MULTIFLORA Benth. Pl. Hartw. p. 339.

528. MILLA (HESPEROSCORDON) HYACINTHINA Baker in Jour. Linn. Soc. 11, p. 385. *Hesperoscordon Lewisii* Hook. l. c.

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* SCOLIOPUS Torr. char. fruct. — Capsula tenuis, ovata, stylo brevi acuminata, irregulariter (sæpe longitudinaliter) fatiscens, oligosperma. Semina adscendentia, oblonga, subcurvata; testa nucleo conformi leviter sinuoso-striata; chalaza majuscula depressa; rhapne (haud prominula) crista lineari scariosa ut videtur bilamellata appendiculata! Embryo minimus, oblongus, in albumine corneo hilo proximus.

529. CAMASSIA ESCULENTA Lindl.; Hook. l. c. With mature fruit.

530. ALLIUM ACUMINATUM Hook. Fl. Bor.-Am. 2, t. 196.

531. ALLIUM SERRATUM S. Watson, Bot. King Expl. p. 487, t. 37, f. 4, 5.

532. TOFIELDIA GLUTINOSA Willd.; Hook. Fl. Bor.-Am. 2, t. 191.

533. XEROPHYLLUM SETIFOLIUM Michx., var. Lindl. Bot. Reg. t. 1613. *X. tenax* Pursh, Fl. 1, t. 9. In fruit.

534. ZYGADENUS NUTTALLII Gray; Watson, l. c. *Amianthium Nuttallii* Gray, Melanth. Rev.

535. STENANTHIUM OCCIDENTALE, n. sp. Caule subaphyllo (semipedali ad bipedalem) gracili; foliis aut lineari- aut lato-lanceolatis basi attenuatis; racemo laxifloro seu panicula simplici; pedicellis gracilibus mox nutantibus bracteam longe superantibus; perianthio purpureo-flavescente, phyllis lanceolatis ultra medium campanulato-conniventibus apice recurvo attenuato-acuminatis; seminibus utrinque anguste alatis. — Collected in the "Rocky Mountains" by Bourgeau, 1858; and "Cascade Mountains, lat. 49°, 1859, Kootenay, 1860, Rocky Mountains lat. 49° at 6000 feet above the level of the sea, 1861," Dr. Lyall; and now by Mr. Hall in the foothills of these mountains, upon mossy banks of streams. A striking species. Flowers from 6 to 20 in the raceme or simple panicle, polygamous, over half an inch long: perianth apparently greenish purple with the recurved tips yellowish. Pedicels longer than the flowers and the more or less scarious bracts, slightly thickened at the apex. Ovary free from the perianth except the extreme base. Mature capsule an inch long, including the slender persistent styles. Seeds with the narrow wing 3 to 4 lines long.

536. JUNCUS EFFUSUS L.: with open panicle. 537. Var. BRUNNEUS Engelm. Rev. Junc. p. 491; a slender form.

538. JUNCUS PATENS E. Meyer.; Engelm. l. c. p. 443.

539. JUNCUS DRUMMONDII E. Meyer; Engelm. l. c. p. 444.

540. JUNCUS TENUIS Willd., var. SECUNDUS Engelm. l. c. 541. Var. CONGESTUS Engelm. l. c. Two extremely marked forms.

542. JUNCUS BUFONIUS L.

543. JUNCUS TRIFORMIS Engelm. l. c. p. 492. Collected in immense abundance.

544. JUNCUS FALCATUS E. Meyer; Engelm. l. c. p. 452 & 495. 545. Larger and capitate form, with mature fruit.

546. JUNCUS LONGISTYLIS Torr. Bot. Mex. Bound. p. 223; Engelm. l. c. In small quantity, at the Cascades.

547. JUNCUS ACUMINATUS Michx.; Engelm. l. c. 548. A form of the same.

549. JUNCUS MERTENSIANUS Bongard, Veg. Sitch. p. 167; Engelm. l. c. p. 479.

550. JUNCUS XIPHIOIDES E. Meyer; Engelm. l. c. p. 481.

551. JUNCUS OXYMERIS Engelm. l. c. p. 483.

552. LUZULA SPADICEA DC., var. PARVIFLORA. 553. Var. MELANOCARPA (*L. melanocarpa* Desv.).

554. LUZULA COMOSA E. Meyer; slender forms, appearing different from the next. 555. A dwarf form.

556. LUZULA CAMPESTRIS Desv.: a dark-colored form.

557. CYPERUS INFLEXUS Muhl. 558. CYPERUS OCCIDENTALIS Torr. Mon. Cyp. p. 259.

559. DULICHIUM SPATHACEUM Pers. Not before received from west of the Rocky Mountains.

560. ELEOCHARIS ACICULARIS R. Br. 561. E. PALUSTRIS R. Br.: large form.

562. SCIRPUS LACUSTRIS L. 563. S. MICROCARPUS Presl; Gray, Man. p. 564 (*S. lenticularis* Torr.).

564. SCIRPUS (ISOLEPIS) PYGMÆUS Gray, Proc. Am. Acad. 7, p. 392. *Isolepis leptocaulis* Torr.

565. FIMBRISTYLIS CAPILLARIS Gray: a small state.

566. FIMBRISTYLIS; a minute species, apparently the same as one which has already been collected in California, but unpublished: the specimens for comparison not at hand.

567. CYPERUS ACUMINATUS Torr. Mon. Cyp. p. 436. New to the Pacific coast; a small form.

568. RHYNCHOSPORA ALBA Vahl.

569.* CAREX NIGRICANS C. A. Meyer, Cyp. Nov. in Act. Petrop. 17, t. 7.

570. CAREX BREWERI Boott, Ill. Car. 4, p. 142, t. 55.

571. CAREX POLYTRICHOIDES Muhl.; Boott, l. c. t. 469.

572. CAREX HOOKERIANA Dewey; Hook. Fl. Bor.-Am. t. 212.

573. CAREX STIPATA Muhl.

574. CAREX KUNZEI Olney, ined. *C. leiorhyncha* Kunze, Supp. Car. t. 2, fig. 1, non C. A. Meyer.

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* These *Carices* are determined by S. T. Olney, Esq., of Providence, who is making a very critical study of the North American species.

575. Carex Douglasii Boott, in Hook. l. c. t. 214; all male plants.

576. Carex vitilis Fries, var. alpicola, Wahl.

577. Carex Bolanderi Olney in Proc. Am. Acad. 7, p. 393. *C. Hartwegi* Dewey, non Boott. 578. Var. elongata Olney. 579. Var. minor Olney. 580. Var. sparsiflora Olney.

581. Carex tenella Schkuhr. *C. disperma* Dewey.

582. Carex echinata Murray, Comm. Gœtt. 1770. *C. stellulata* Good. 1792.

583. Carex leporina L. var. Americana.

584. Carex festiva Dewey. 585. Var. minor Olney. 586. Var. gracilis Olney. *C. propinqua* Boott in Bot. Whippl., non Nees & Meyen.

587. Carex athrostachya Olney l. c.? Fruit too broad and color browner.

588. Carex scoparia Schkuhr; Boott, Ill. Car. t. 368.

589. Carex lagopodioides Schkuhr; Boott l. c. t. 370.

590. Carex albolutescens Schw., var. brunnea Olney. 591. Var. sparsiflora Olney.

592. Carex Sitchensis Prescott; Boott, Ill. Car. t. 518, 519.

593. Carex cæspitosa L. But the perigynium slightly toothed at the apex.

594. Carex elata Allioni, 1785. *C. stricta* Good. 1792.

595. Carex borealis Lang, 1843, ex Anderss. Cyp. Scand. 596. A rather stouter form of the same?

597. Carex vulgaris Fries? The scale perhaps too pointed.

598. Carex decidua Boott, Ill. Car. 1, p. 63, t. 170.

599. Carex Mertensii Prescott; Boott, Ill. Car. 4, p. 212.

600. Carex ferruginea Schkuhr. Not *C. sempervirens* Vill.

601. Carex frigida Allioni; Boott. Ill. Car. 4, p. 208.

602. Carex laxiflora Lam. var. plantaginea Boott.

603. Carex Rossii Boott, Ill. Car. 2, p. 99, t. 205.

604. Carex Pennsylvanica Lam. Some specimens have a long-pedunculate lower spike.

605. Carex Oregonensis, n. sp. Olney, ined.

606. Carex amplifolia Boott, Ill. Car. 1, p. 17, t. 48.

607. Carex lanuginosa Michx.; Boott, l. c. t. 129.

608. Carex vesicaria L., var. lanceolata Olney. Achenium resembling that of Boott, Ill. Car. t. 537 fig. e., rather than the

admirable one found in Schkuhr. Riedgr. fig. 106. 609. Var. GLOBOSA Olney, ined.

610. PHLEUM ALPINUM L.; Hook. Fl. Bor.-Am. 2, p. 234.

611. ALOPECURUS PRATENSIS L.: a slender form, like that collected in California by Bolander.

612. CINNA ARUNDINACEA L., var. PENDULA Gray, Man. *C. pendula* Trin.

613. AGROSTIS PALLENS Trin.? This Prof. Thurber names *A. exarata* Trin.

614. AGROSTIS EXARATA Trin., a long-awned variety, according to Prof. Thurber. It is the *Deyeuxia alopecuroides* of Nuttall's herbarium, which was published by Mr. Buckley.

615. AGROSTIS ALBA L. A broad-leaved form.

616. AGROSTIS SCABRA Willd. *A. laxiflora* Richard.

617. AGROSTIS CANINA L.

618. AGROSTIS ÆQUIVALVIS Trin. Agrost, p. 116, fide Thurber: who now refers to it his own *A. Hillebrandii*, in Coll. Bolander, — an attenuated pale-green form. The " valves " are by no means equal.

619. AGROSTIS EXARATA Trin.: one of the forms of this polymorphous species according to Prof. Thurber.

620. VILFA DEPAUPERATA Torr. in. Hook. Fl. Bor.-Am. 2, p. 257, t. 236: but occasionally the paleæ are pointed as in *V. cuspidata* Torr., into which it may pass.

621. SPOROLOBUS CRYPTANDRUS Gray, Man. ed. 5, p. 610. 622. Same with open panicle.

623. CALAMAGROSTIS ALEUTICA Trin.; Hook. Fl. Bor.-Am. 1, p. 241.

624. POLYPOGON MONSPELIENSIS Desv.

625. STIPA OCCIDENTALIS Thurber; Watson Bot. King, p. 380.

626. SPARTINA CYNOSUROIDES Willd. 627. S. GRACILIS Trin. The latter is named *S. polystachya* in Hooker's List of Geyer's Plants, and is doubtless *S. junciformis* Engelm. & Gray Pl. Lindl.

628. GLYCERIA NERVATA Trin.: a large form; passing to the next.

629. GLYCERIA PAUCIFLORA Presl, Rel. Hænk. *G. nervata* var. *latifolia* Monro.

630. GLYCERIA FLUITANS R. Brown; slender form with small spikelets.

631. ERAGROSTIS REPTANS Nees; in two or three forms.

632. POA STENANTHA Trin. Probably also *P. leptocoma* Trin. and certainly *Festuca nervosa* Hook. Fl. Bor.-Am. t. 232.

633. POA ANDINA Nutt. herb.; a condensed form with larger spikelets.

634. POA TENUIFOLIA Nutt. in herb.; Watson, Bot. King, p. 387. *Poa melicoides* Nutt. in herb. Durand and herb. Lowell. The proper genus perhaps is *Atropis*, and indeed the present species appears to pass into *Atropis Californica* (or *Schlerochloa Californica*) Munro.

635. MELICA BULBOSA Geyer in Hook. Kew Jour. Bot. (Pl. Geyer.) 8, p. 10. *M. poœoides* Torr. Bot. Whippl., Bolander, &c., non Nutt.* Geyer's name is preferred in the absence of any reason for changing it to *M. Geyeri*, as Munro proposes; especially as the plant described under this name by Bolander is different.†

636. LOPHOCHLÆNA REFRACTA, n. sp. Ab affini *L. Californica* insigniter differt foliis latioribus (lin. 4 latis), racemo virgato, spiculis mox refractis angustioribus fere linearibus, floribus subdissitis, paleis tenuioribus fere lævibus, arista palea ipsa breviore. — An interesting accession to a remarkable genus, which, it seems to me, should stand next to *Melica*. I possess no specimen of "*Melica aristata* Thurber" in Dr. Bolander's revision of the genus: but *Melica Harfordii* of Bolander is evidently an intermediate link.

637. FESTUCA MYURUS L., the *F. bromoides* L. also.

638. FESTUCA MICROSTACHYS Nutt. Pl. Gamb. p. 187. 639. Var.

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* *Melica poœoides* Nutt. Pl. Gamb. p. 188, is described as from Dr. Gambell's collection, and is said to come from the "Island of Santa Catalina," — which Gambell visited, but Nuttall did not. In the distributed set of Gambell's plants acquired by Mr. Lowell, and in that for Mr. Durand (now in my possession), there is no "*Melica poœoides*." There is, however, a "*Poa melicoides*" from "Catalina," which is the same as no. 634 of the present collection, namely, a plant which Nuttall named "Poa tenuifolia."

By the kind aid of Dr. Carruthers, keeper of the herbaria of the British Museum, I am enabled to say that the "*Melica poœoides* Nutt. MSS." of his own herbarium, and apparently of his own collecting, is ticketed "San Diego." But it is pretty clearly the plant described in Pl. Gamb. It differs from the *M. panicoides* of the same paper in having (as described) two perfect flowers in most of the spikelets, while that has commonly only one; but both belong to *Melica imperfecta* Trin.

† *Melica Geyeri* Bolander in Proc. Calif. Acad. 4, p. 102, as represented by no. 40 of his small collection, is very unlike *M. bulbosa* of Geyer's collection. To obviate further confusion, it would be well, and perhaps not too late, for Dr. Bolander to restore to it specifically his appropriate name of *M. bromoides.*

ciliata (*Vulpia* Munro). A little of the var. *divergens* Thurber was also collected. A polymorphous species, which Professor Thurber inclines to unite with the European *F. delicatula* Lag.

640. FESTUCA OCCIDENTALIS Hook. 641. Variety less evolute, approaching *F. duriuscula L.*

642. FESTUCA SCABRELLA Hook. Fl. Bor.-Am. t. 233.

643. FESTUCA OVINA L. var. Dwarf alpine form.

644. BRIZOPYRUM SPICATUM Hook. & Arn. *B. boreale* Presl.

645. BROMUS (SCHEDONORUS) SUBULATUS Griseb. in. Fl. Ross. 2, p. 358. *Festuca subulata* Bongard Veg. Sitka, p. 55; Griseb. l. c. p. 354. Our specimen from Chamisso's collection (Unalaschka) is named "*Festuca acerosa* Trin." A younger form, apparently, also from the St. Petersburg Academy, has a printed ticket, "*Festuca altaica* Trin.: Alaschka." This rare and ambiguous grass seems to belong to *Bromus*, rather than to *Festuca.*

646. BROMUS (CERATOCHLOA) CARINATUS Hook., fide Thurber in litt. I do not find the name. 647, 648. Forms of the same.

649. BROMUS RACEMOSUS L.; a depauperate form, doubtless introduced.

650. TRITICUM REPENS L.: a slender form of it or *T. caninum.*

651. ELYMUS SIBIRICUS L. 652. A form with downy culm and leaves. 653. A slender and smooth variety.

654. ELYMUS SITANION Schult. *Sitanion elymoides* Raf.

655. ELYMUS CONDENSATUS Presl, var. *E. dasystachys* Trin.?

656. HORDEUM PRATENSE Hudson. 657. A glaucous form of it.

658. LOLIUM PERENNE L., var. MULTIFLORUM. *L. multiflorum* Lam. Italian Ray Grass. Doubtless introduced.

659. DANTHONIA SPICATA Beauv. A Californian form with larger spikelets and leaves.

660. DANTHONIA CALIFORNICA Bolander, Proc. Calif. Acad. *D. unispicata* Munro in herb. appears to be a reduced form of this.

661. TRISETUM SUBSPICATUM Beauv., var. MOLLE Gray; a short but very downy form. 662. A tall but almost glabrous form.

663. TRISETUM CERNUUM Trin.; Hook. Fl. Bor.-Am. 2, p. 244.

664. AIRA DANTHONIOIDES Trin. 665. A. ELONGATA Hook. l. c. t. 228. The two seem somewhat too closely allied.

666. AIRA LATIFOLIA Hook. l. c. p. 243, t. 227.

667. AIRA (DESCHAMPSIA) CÆSPITOSA L. A taller and a lower form of the species.

668. ARRHENATHERUM AVENACEUM Beauv. Introduced?

669. HIEROCHLOE MACROPHYLLA Thurber, in Bolander coll.

670. BECKMANNIA ERUCÆFORMIS Host.

671. PANICUM DICHOTOMUM L. var.

672. PANICUM SCOPARIUM Lam., fide Thurber. "This is *P. macrocarpon* Torr. Fl. N. Y., and the *P. pauciflorum* of Gray, Man., but whether of Elliott is very doubtful. A good character is found in the perfect flower, namely a distinct horizontal fold or ridge at the base of the lower palet." Thurber, in litt.

673. POLYPODIUM VULGARE L., var. OCCIDENTALE Hook. Fl. Bor.-Am. 2, p. 258.

674. POLYPODIUM SCOULERI Hook. & Grev. Ic. Fil. t. 56.

675. GYMNOGRAMME TRIANGULARIS Kaulf.; Hook. & Grev. Ic. Fil. t. 153.

676. ADIANTUM PEDATUM L., and, 677, a little A. CHILENSE Kaulf., not before found so far north.

678. PTERIS AQUILINA L., var. LANUGINOSA Hook. Spec. Fil.

679. CRYPTOGRAMME ACROSTICHOIDES R. Br.; Hook. & Grev. Ic. Fil. t. 29.

680. LOMARIA SPICANT Desv. *Blechnum boreale* Swartz? Hook. l. c.

681. ASPLENIUM TRICHOMANES L. Rather larger than the Eastern American form.

682. ASPLENIUM (ATHYRIUM) FILIX-FŒMINA Bernh., mostly with pinnules deeply pinnatifid. 683. Var. MICHAUXII Mettenius; D. C. Eaton in King Expl. p. 396: a remarkable form of the species.

684. PHEGOPTERIS DRYOPTERIS Fée. *Polypodium Dryopteris* L.

685. ASPIDIUM SPINULOSUM Swartz, var. DILATATUM. 686. Another form of the same.

687. ASPIDIUM FILIX-MAS Swartz; the Californian form, namely *A. argutum* Kaulf.

688. ASPIDIUM MUNITUM Kaulf.; a short form. 689. Same with shorter and obtuse pinnæ, imitating *A. Lonchitis.*

690. CRYSTOPTERIS FRAGILIS Bernh. 691. Another form of the same.

692. WOODSIA SCOPULINA D. C. Eaton in Canad. Nat. 1865; Baker, Syn. Fil.

693. ISOETES NUTTALLII A. Braun, probably not yet published. According to Dr. Engelmann, it is distinguished by the velum entirely covering the sporangium, and by the strongly ridged but slightly tuber-

culate-dotted macrospores. It grows in damp springy soil, not in water, in the Willamette Valley, maturing in August and September.

694. SELAGINELLA RUPESTRIS Spring, var. TROPICA Spring. *S. struthioloides* Presl.

695. EQUISETUM LÆVIGATUM A. Braun; Gray, Man. p. 655.

696. EQUISETUM LIMOSUM L.

697. MARSILIA VESTITA Hook. & Grev. Ic. Fil. t. 159.

698. AZOLLA CAROLINIANA Willd. *A. microphylla* Kaulf.

699-701. NITELLÆ species, not determined.

The *Musci*, *Hepaticæ*, and *Lichenes* are under examination, and will be separately published.

Six hundred and forty-second Meeting.

March 12, 1872. — MONTHLY MEETING.

The CORRESPONDING SECRETARY in the Chair.

Mr. C. S. Pierce made a communication on the photometric measurement of the stars, and exhibited an instrument for this purpose devised by Zöllner.

Mr. Lewis H. Morgan presented the following paper on Australian Kinship; with Appendices, by Rev. Lorimer Fison.

There are five classes of facts, preserved in the institutions of savage and barbarous nations, which are now attracting increasing attention. In connection with inventions and discoveries, they have been the instrumentalities by means of which mankind traversed the successive stages of savagery, of barbarism, and of civilization. When these facts are fully ascertained and compared, and the logical deductions are gathered into definite propositions, the most instructive portion of the ancient experience of mankind will be recovered and utilized.

It seems probable that the advancement of man through the successive stages of savagery and of barbarism was greater in degree than it has been since in the stages of civilization. When the savage had raised himself to a barbarian, and the latter had risen to the pastoral and agricultural conditions, this improved man, although still a barbarian, was further removed from the primitive savage than the philosopher of the present age is above this same barbarian. Be this as it may, the experiences of these several conditions are successive links of a common chain, each of which is necessary to the interpretation of